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Practical Pharmacy Edition

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Editorial

THE PHARMACIST'S OPPORTUNITY

NOT all research makes headlines. Nor does all research produce new "miracle drugs" for the treatment of diseases which for years have defied control. There is a great deal of very worth-while, practical, productive research being carried on constantly by private physicians, hospital technicians and prescription pharmacists through the country but it isn't the sensational, glamorous type. It's homely research, dealing with common drugs and common diseases, but it contributes to the more effective treatment of disease, nonetheless.

A California doctor studies the best method of instilling drops into the nose and announces a new technique. A Chicago hospital works out a routine for the care of influenza patients. A Pittsburgh dermatologist develops a non-staining, synthetic coal tar. A London hospital finds a new use for benzyl benzoate in the treatment of scabies. A Washington physician develops a sulfanilamide ointment. A Minnesota pharmacist works out a new flavoring agent for prescription use. A New York hospital pharmacist develops a new iron preparation for pediatric use.

You don't find these results of research in the headlines of your daily newspaper, but you do find them tucked away in the pages of some medical, dental, chemical or other professional journal . . . national, state or foreign. Unfortunately, not all physicians read the reports of these research studies, for physicians, like pharmacists, are busy men and do not have time to read half a hundred medical journals a month.

There is a job to be done by some one to bring these reports to the attention of physicians in a form in which they can use the information; pared of non-essential details yet complete in essential facts. Who better can do this job than the pharmacist?

Through the pharmacist these new treatments and improved forms of medication may be brought to the physicians of every city, town and hamlet in the country. One of the most important services of this JOURNAL is its review of current medical, dental, hospital and chemical publications and the publishing of summaries of articles which offer the pharmacist an opportunity to pass along information to physicians.

The article on the treatment of athlete's foot, which appears in this issue, is an excellent example of material that offers the pharmacist such an opportunity. The original article appeared in the *Journal of Investigative Dermatology* and was seen by only a small fraction of the physicians of the country. Yet where is there a physician who isn't called upon to treat athlete's foot? Here are nine of the foremost dermatologists of the day giving the details of how they treat the disease. Would physicians welcome the information from pharmacists? Physicians will listen to anyone who has a worth-while message that will help them in their practice of medicine. Physicians listen to manufacturers' detail men not because they like the particular company or the particular individual who calls on them, but because they learn of new, more effective methods of treating diseases that they are called upon to treat. The pharmacist with a real message to deliver is equally well received.

The athlete's foot article is but one. The article on influenza is another; the material in the *Druggists Digest* offers unlimited possibilities for detailing. No longer can pharmacists say, "I'd like to detail doctors, but what shall I detail them on?"

All of this material represents research of a very practical nature. The question "Do physicians need information on athlete's foot, on influenza or on the various subjects discussed in the *Druggists Digest*?" is answered by the fact that most of this information is obtained from recent medical journals, written by physicians for physicians. True, they are largely journals of the medical specialists which the average general practitioner seldom sees, but that gives the pharmacist a greater opportunity to aid in disseminating information which his physician friends would otherwise miss.

The value of any research, from the viewpoint of the public, is in how extensively its results are utilized. The discovery of a new drug for the treatment of disease is merely a laboratory curiosity of academic interest until that drug is available in the pharmacies of every neighborhood and physicians prescribe it. Then, and only then, does it contribute to the treatment of disease. So, also, with the type of research which is represented in the digests appearing in this JOURNAL. The publication of nine dermatologists' clinical experience with athlete's foot is of no value to the public generally until physicians become familiar with the methods of treatment which these specialists have then found most effective and then use them on their patients.

Much has been said and written on the subject of detailing doctors, but the greater majority of speakers and writers devote their efforts to impressing pharmacists with the advisability of such detailing and to outlining the mechanics of a detailing call. Actually, however, the pharmacist doesn't need to be "sold" on the idea of detailing; he has seen how effective this method of promotion has been for pharmaceutical manufacturers. Neither does he need a great amount of coaching in the technique of detailing for the physician looks upon the pharmacist's visit in quite a different light than he does the call of a manufacturer's representative. He expects the professional detail man to be a master-salesman, thoroughly schooled and well rehearsed to make a smooth, flawless presentation. He recognizes the pharmacist as a fellow member of the community, working hand-in-hand with him in taking care of the physical complaints of the public. The pharmacist's visit is informal and requires but a simple, direct, friendly approach.

The pharmacist's need, therefore, is not for arguments on *why* he should detail doctors or for discussions of *how* he should detail them, but for a continuous flow of information on *what* to detail them on. It is not enough to say, "Detail doctors on the U. S. P. and N. F." The pharmacist needs specific products to place before the physician; products which represent the newest thought of scientific authorities on the treatment of disease. Information on such products is available in the current scientific literature and it is the service of this JOURNAL to comb the state, national and foreign scientific Journals each month to obtain the material and then present it for the use of pharmacists.

Human nature being as it is, every pharmacist in every community will not take advantage of the opportunity to detail physicians with this material. Some lack the interest, initiative and ability, while others will plan to do it but never get around to it. This is just as well, however, for otherwise physicians would be detailed with the same message in duplicate, triplicate or tenfold.

But there are ever-increasing numbers of pharmacists who are eager to develop their prescription practices and professional services and who will use this material. It is for them that it is published. Theirs is an opportunity to render the physicians, dentists and veterinarians of their communities a real, practical, professional service.

YOU HAVE A JOB TO DO IN VENEREAL DISEASE CONTROL

by ROBERT P. FISCHELIS, PHAR.D.

CHAIRMAN OF THE JOINT COMMITTEE OF THE AMERICAN PHARMACEUTICAL AND AMERICAN SOCIAL HYGIENE ASSOCIATIONS

NEW ARMY CAMPS AND MOVEMENT OF DEFENSE WORKERS MAKE THE NEED FOR VIGOROUS ACTION BY ALL PHARMACISTS IN THE CONTROL OF THESE DISEASES MORE ACUTE TO-DAY THAN EVER BEFORE

A TREMENDOUS percentage of cases of venereal disease seek out the pharmacy first. Ignorant of the seriousness of these diseases and the importance of prompt, competent treatment, these unfortunate individuals take the pharmacist aside for whispered conversations in the hope that he will either sell them something that will cure the disease or recommend a doctor who has a quick cure.

This factor alone makes the pharmacist the most important single individual in the effectiveness of the current National Program for Venereal Disease Control. Pharmacy, as a profession, has enrolled in this campaign through the Joint Committee of the AMERICAN PHARMACEUTICAL ASSOCIATION and the American Social Hygiene Association. The extent to which pharmacists, as individuals, take part in the campaign depends upon their sense of professional responsibility and their desire to perform a vital service in this very important public health activity. The program offers the opportunity for all degrees of coöperation.

Certainly the minimum degree of coöperation that any pharmacist can furnish is to give competent advice to those who come to him for information. Giving competent advice to the sufferer from syphilis or gonorrhea means (1) refusing to sell him any quack remedies for its "treatment," (2) discouraging him from going to see any quack doctor who advertises quick cures for venereal diseases, (3) impressing him with the seriousness of these diseases but pointing out that they *can* be cured through competent treatment, (4) urging him to consult a dependable physician for treatment.

No pharmacist can do less, but many will wish to do more.

Because the retail pharmacies of the country are open long hours and at least one member of virtually every family in the United States visits one of them sometime every week of the year, the drug store is the most important outlet for health display material and educational literature. The pharmacy window, the display counter and the pharmacist's word of recommendation represent one of the most powerful advertising combinations available. Manufacturers of drugs and pharmaceuticals spend thousands of dollars every year to secure the support of this combination for their products. Will you contribute a fraction of this advertising power in your pharmacy to the interests of public health?

State and local health departments will gladly supply literature for distribution through your pharmacy. A small space on the counter devoted to such literature so that customers can help themselves represents a worth-while contribution to public education. Some will take them home to read, others will pick them up and read them while waiting for their prescriptions to be compounded.

With this article are shown eight new posters designed and prepared by the United States Public Health Service, at Washington, D. C. They are attractive, dramatic and are sure to command attention. They are 28″ x 22″ in size and are reproduced in striking colors. Although produced primarily for the use of public health bureaus, they are being made available to pharmacists. The posters cost five cents each and may be obtained from the Superintendent of Documents, Washington, D. C. (send coins or money orders; no stamps accepted). The cost is small and any pharmacist should be willing to contribute the amount necessary to purchase one, two or all eight of the posters.

Pharmacists belong in the front ranks of those who are fighting the scourge of venereal disease. Enrollment is for the duration of the battle—for as long as it takes to defeat these insidious enemies of life, health and happiness that claim a million new victims each year. Will you join up?

PROGRESS BEING MADE

Real progress has been made since the joint committee of our ASSOCIATION and the American Social Hygiene Association was created two years ago. Many state associations have appointed special committees on veneral disease information to facilitate the joint efforts of pharmacists and public health groups within their respective states. Many individual pharmacists have made real contributions to the movement through the use of educational displays and the distribution of literature. Still greater coöperation is needed.

Hon. Paul V. McNutt, Federal Security Administration, in commenting on the sale of venereal disease nostrums recently, said, "*We believe we can count on the pharmacists of the Nation to end this evil themselves.*" That statement is not only a challenge to pharmacists to fulfil their professional obligation to the public, but it implies that other steps might be taken by those in authority if pharmacists fail to "clean house" voluntarily.

A NEW PROBLEM

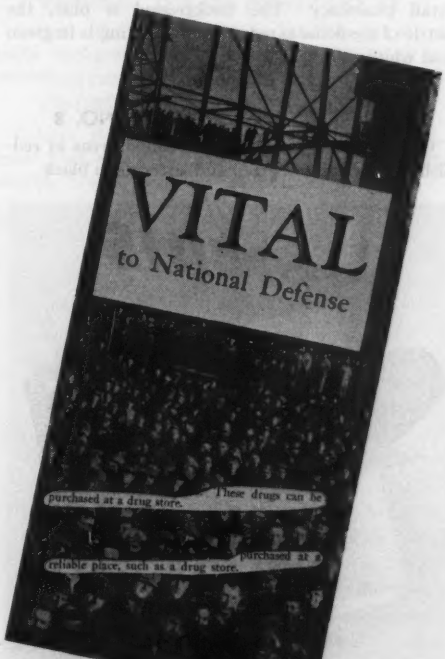
The drafting of young men into the service and the employment of new thousands in the defense industries make the problem of venereal disease control extremely important right now. Administrator McNutt has said, "The need for vigorous action against these drugs (venereal disease nostrums) is to-day more acute than ever. We have new Army camps in many areas. These men have excellent treatment and prophylactic facilities and extensive education, but old superstitions and old practices linger on. We have thousands of workers who have gone from one town to another to take defense jobs. They have a right to protection. But beyond that individual right, America cannot afford to let such a threat to its military and industrial strength persist."

The American Social Hygiene Association has prepared special folders for distribution to young men going into the Army and Navy and to industrial workers. In discussing venereal disease prevention in these booklets the young men are specifically directed to the pharmacy for dependable materials rather than to promiscous sources of supply.

The venereal disease campaign is predicated on the voluntary support of retail pharmacists, and public health officials from Administrator McNutt down have expressed their confidence that pharmacists themselves will take such steps as are necessary to make the campaign effective.

We have to make good. If you have not already done so, rid your pharmacy of venereal disease nostrums. Be proud of the fact that you stock no product for the self-medication of syphilis or gonorrhea. Obtain a supply of educational leaflets from your local or state board of health and give them a prominent spot on your counter. Send for one or more of the Public Health Service posters shown in this article and use them in your windows and in your store.

You have a job to do in this venereal disease campaign and you cannot afford to "fall down" on it.



One of the new booklets of the American Social Hygiene Association; inserts show how readers are being directed to drug stores for dependable prophylactic materials.

YOU CAN OBTAIN THESE POSTERS

These striking posters have been developed by the United States Public Health Service primarily for the use of public health bureaus but they are being made available to pharmacists. They may be obtained at five cents each (send coins or money order; no stamps accepted) from the Superintendent of Documents, Washington, D. C. Order posters by number.

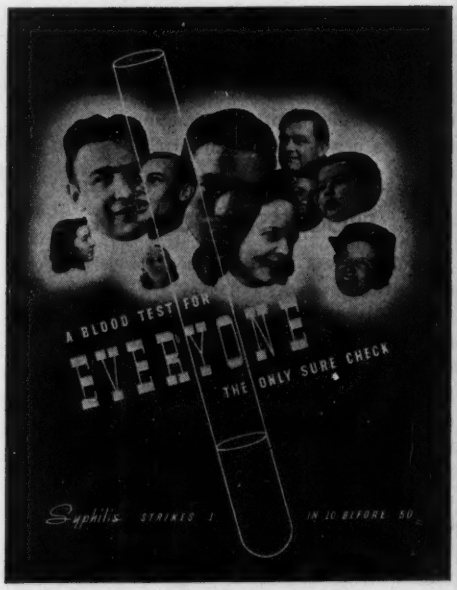
The cost is small and any pharmacist should be willing to contribute the amount necessary to purchase one, two or all eight of the posters (seven are shown on these pages, one on the front cover of this issue).

VENEREAL DISEASE POSTER NO. 7

This poster is shown on the front cover of this issue. It is particularly well adapted for use in a retail pharmacy. The background is blue, the bottle of medicine is red and the lettering is in green and white.

VENEREAL DISEASE POSTER NO. 8

Colors: Background white, shaded areas in reddish brown, hand in green and lettering in black.

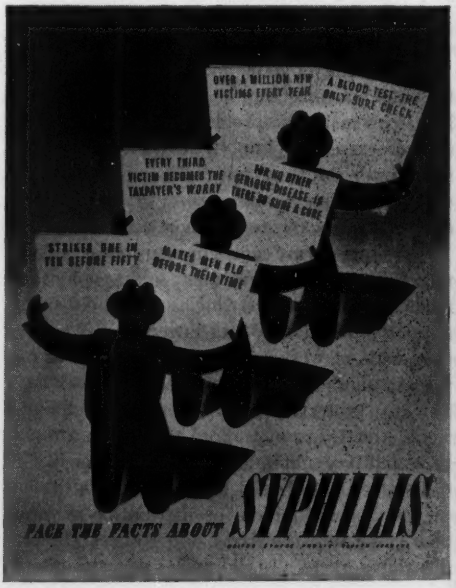


VENEREAL DISEASE POSTER NO. 11

Colors: Background medium blue, heads in black, test tube in white outline with red liquid and lettering in yellow and white.

VENEREAL DISEASE POSTER NO. 9

Colors: Lower background white shading to blue at top, figures in brown, lettering on newspapers is red and lettering at bottom of poster is brown.

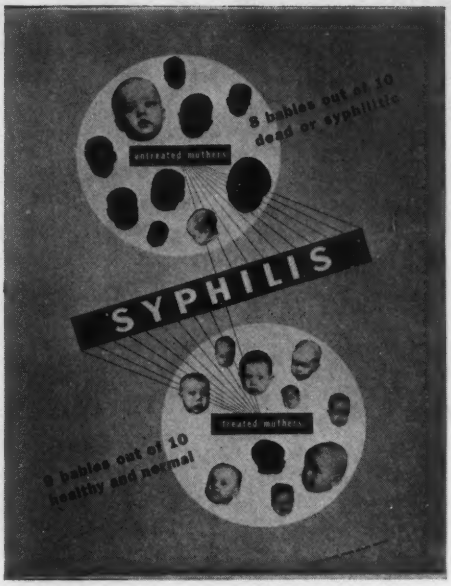

OVER A MILLION NEW VICTIMS EVERY YEAR
A BLOOD TEST—THE ONLY SURE CHECK
EVERY THIRD VICTIM BECOMES THE TAXPAYER'S WORRY
AND NO OTHER DISEASE IS THERE SO EASY A CURE
STRIKES ONE IN TEN BEFORE FIFTY
MAKES MEN OLD BEFORE THEIR TIME
FACE THE FACTS ABOUT SYPHILIS

VENEREAL DISEASE POSTER NO. 13

Colors: Background shaded in green, figure in shades of reddish brown and yellowish brown, lettering in black and in reddish brown

VENEREAL DISEASE POSTER NO. 10

Colors: Background white, figures in brown with bathing suits in various colors, water blue, lettering in blue and brown.

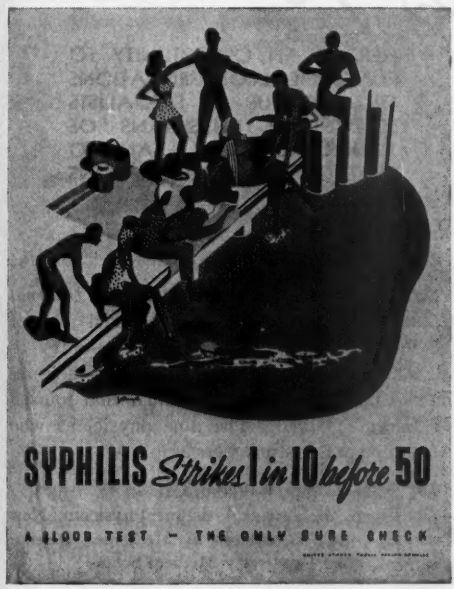


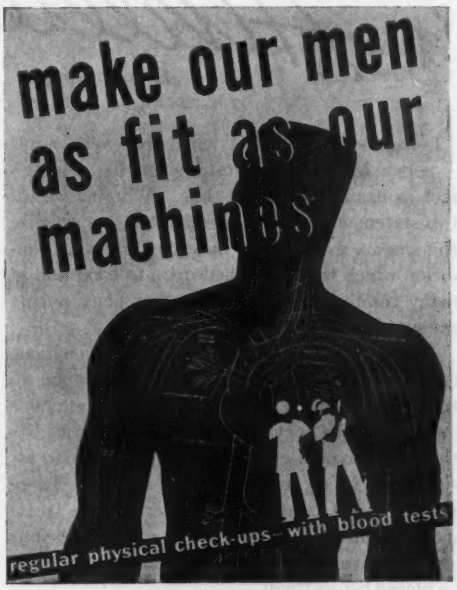
VENEREAL DISEASE POSTER NO. 12

Colors: Background yellow, heads in black on white background, the word "SYPHILIS" is in reverse on reddish brown background.

VENEREAL DISEASE POSTER NO. 14

Colors: Background light blue with cloud effect, figure blue with white markings, lettering at top in reddish brown, lettering at bottom is white.





HOW NINE DERMATOLOGISTS TREAT *Athlete's Foot*

HERE IS AN OPPORTUNITY TO PLACE THE RECOMMENDATIONS OF A GROUP OF SPECIALISTS BEFORE THE PHYSICIANS OF YOUR COMMUNITY . . . AND TO DEVELOP NEW PRESCRIPTIONS

IT has been said that virtually every adult person in the United States either has athlete's foot or has had it at one time. Whether or not this statement is correct, dermatologists recognize this disease as the third most common skin condition which they are called upon to treat and in many communities it assumes first place during the summer months.

In every city, town and hamlet throughout the country, physicians will be called upon to treat an increasing number of cases of athlete's foot during the next few months and pharmacists this year have an exceptional opportunity to assist them in coping with the problem. There are many facts and fancies concerning the treatment of this skin condition and most physicians are receptive to any new information which can be placed before them.

So important is this subject that *The Journal of Investigative Dermatology** has asked nine of the foremost dermatologists in the country to tell how they treat athlete's foot, and their replies are published as a symposium in that Journal for December 1940. The nine physicians who coöperated in this study were as follows:

Dr. Ervin Epstein, Oakland, Cal.

Dr. George M. Lewis, Assistant Physician, New York Hospital; Instructor in Medicine (Dermatology), Cornell University Medical School.

* Williams & Wilkins Co., Baltimore.

Dr. Adolph B. Loveman, Clinical Associate in Dermatology and Syphilology, University of Louisville School of Medicine, Louisville, Ky.

Dr. Donald M. Pillsbury, Associate Professor of Dermatology and Syphilology, Medical School, University of Pennsylvania, and the Graduate School of Medicine, University of Pennsylvania.

Dr. Arthur G. Schoch, Assistant Professor of Clinical Dermatology and Syphilology, Baylor University, Dallas, Texas.

Dr. Bedford Shelmire, Chief of Staff, Dermatology and Syphilology, Baylor Hospital; Freeman Memorial Hospital; Parkland Hospital; Professor in Dermatology and Syphilology, Baylor University, Dallas, Texas,

Dr. Dudley C. Smith, Professor in Dermatology and Syphilology, University of Virginia Hospital.

Dr. Jacob H. Swartz, Consultant Dermatologist, Addington Memorial Hospital; Boston Psychopathic Hospital; Jewish Memorial Hospital; Massachusetts Eye and Ear Hospital; Dermatologist, Massachusetts General Hospital; Associate in Dermatology, Harvard and Graduate School of Harvard University.

Dr. Lester M. Wieder, Attending Staff, Columbia Hospital; Evangelical Deaconess Hospital; Milwaukee County General Hospital; Clinical Instructor, Marquette University, Wisconsin University.

Through this symposium any pharmacist can place the recommendations of these specialists before the physicians in his neighborhood. Few opportunities to render such an important and valuable specific service have been offered to pharmacists and they will do well to make the most of it.

THREE STAGES OF THE DISEASE

Most cases of athlete's foot which confront the physician are seen in one of three general stages: (1) the *acute stage* in which vesicles are produced in rapid succession and the area is considerably inflamed; (2) the *sub-acute stage* in which the inflammation has subsided and the vesicles are produced slowly if at all; and (3) the *chronic stage* in which the disease "hangs on" with occasional flare-ups and resists complete irradication.

In athlete's foot, as with other types of eczema, the treatment varies inversely with the severity of the disease. In the acute stage the treatment is mild, usually consisting of foot soaks or compresses of potassium permanganate, or boric acid. As the disease becomes less acute the treatment becomes more aggressive and various fungicidal preparations are used. Even after symptoms of the disease are apparently cleared up, most physicians prescribe the continued use of special formula dusting powders to prevent recurrences.

Another problem in connection with the treatment of athlete's foot is the prevention of the spread of the disease to other members of the household and the avoidance of reinfection of the patient. With this article is a list of suggestions for hygienic measures which dermatologists advise. Some pharmacists may wish to review these with physicians, determine which they wish patients to follow, and then supply patients with a mimeographed or printed list in much the same manner as the obstetrician gives the prospective mother a list of foods to avoid.

TREATMENT IN ACUTE STAGES

Dr. Epstein prescribes continuous wet dressings of boric acid and the application of 10 per cent boric acid ointment at night. Bed rest is advised in some cases.

Dr. Lewis prescribes wet dressings or soaks of sodium chloride (hypertonic), 3 per cent boric acid, Burow's Solution 1:15, or potassium permanganate 1:3000. Bed rest may be advised.

Dr. Loveman drains all of the larger vesicles, clipping the tops of the blisters and instructing the patient to open aseptically any new vesicles that form. A warm solution of potassium permanganate 1:2000 or 1:4000 is used to soak the feet for 15 to 30 minutes, at least twice daily.

In very acute cases he advises wet dressings of potassium permanganate in the same strength between the soaks. In less acute cases a 1 per cent aqueous solution of gentian violet, or Fusinol (Kendall Co.) is prescribed to be painted between the toes and on the ruptured vesicles twice a day.

When no more vesicles appear, one-half strength Whitfield's Ointment is prescribed to be applied at night, but the permanganate soaks are continued for several days.

Dr. Pillsbury prescribes wet compresses or foot soaks of freshly prepared, hot solutions of potassium permanganate solution 1:5000, 2 to 4 times a day. The patient is advised to open the vesicles with manicure scissors, taking care not to injure the normal skin. He also prescribes Burow's Solution, N. F., 1:16 in water or milk in

some cases, while in others he prescribes either of the following preparations:

Resorcin
Boric Acid.....aa 4.0
One Powder
Sig.: Dissolve the powder in one pint of warm water and use with compress.

Ung. Hydrarg. Ammoniati U. S. P.
Ung. Acidi Borici
Ung. Aqua Rosae.....aa 20.0
Sig.: Apply twice daily, rubbing into skin thoroughly, and removing excess ointment.

Dr. Schoch prescribes foot baths in potassium permanganate solution 1:4000 at room temperature for thirty minutes, twice daily, followed immediately by the application of an ointment containing 3 per cent of boric acid and 2 to 5 per cent of ammoniated mercury in a cold cream base. The patient is instructed to clip off the tops of the vesicles before using the foot bath and, if they are purulent, to paint the base with a 4 per cent gentian violet solution.

Dr. Shelmire prescribes wet dressings and, in some cases, a solution of 3 to 6 per cent salicylic acid in alcohol to be painted between the toes and on opened vesicles.

Dr. Smith prescribes foot soaks in potassium permanganate solution 1:1000 for 15 to 30 minutes, 3 times a day, followed by the application of a fungicidal powder. He advises that when the feet are removed from the permanganate solution, they be allowed to dry by evaporation rather than be wiped dry. The permanganate solution is made up fresh every 48 hours. The foot powder which Dr. Smith prescribes is as follows:

Thymol	0.2
Salicylic Acid	0.2
Boric Acid	2.6
Zinc Oxide	6.0
Zinc Stearate	6.0
Talc	6.0

Sig.: Apply to feet every morning and evening.

If the feet become uncomfortably dry and crusted Dr. Smith prescribes a modified Whitfield's Ointment to be applied once a day. The modified Whitfield's Ointment is as follows:

Thymol	4.0
Salicylic Acid	4.0
Benzoic Acid	4.0
Cold Cream	100.0

Dr. Swartz prescribes warm boric acid soaks for 10 to 15 minutes, 2 or 3 times a day, followed by the use of a soothing, antipruritic lotion of the following formula.

Menthol	gr. v
Zinc Oxide	ʒ ii
Calamine	ʒ i
Phenol	ʒ ss
Liq. Calcis *q. s.*	ʒ viii

When crusting takes place, Dr. Swartz prescribes the use of the following ointment at night in addition to the boric acid soaks and lotion:

Boric Acid	ʒ ss
Zinc Oxide	ʒ ss
Starch	ʒ ii
Petrolatum	ʒ i

He also prescribes rest and elevation.

Dr. Wieder prescribes potassium permanganate soaks, in concentrations depending upon the individual case, and frequently repeated applications of Solution of Aluminum Subacetate, or Solution of Lead Subacetate.

TREATMENT IN SUBACUTE STAGES

Dr. Epstein prescribes the following solution, to be applied twice a day:

Iodine Crystals
Potassium Iodide
Salicylic Acid
Boric Acid.....aa 20 gr.
Alcohol 50%.....*q. s.* 2 oz.

He also uses Castellani's Carbol Fuchsin Stain (Pharmaceutical Recipe Book) in some cases, and full strength Whitfield's Ointment in others.

Dr. Lewis prescribes a 1 per cent aqueous solution of gentian violet and dusting with plain talc.

Dr. Loveman also prescribes a 1 per cent aqueous solution of gentian violet, painted on 2 or 3 times a day. When no more vesicles appear, one-half strength Whitfield's Ointment is prescribed to be applied at night and a mild dusting powder such as Bismuth Formic Iodide is advised for use during the day. One per cent of thymol is sometimes added to the one-half strength Whitfield's Ointment.

Dr. Pillsbury prescribes one of the following preparations:

Thymol	0.5 to 1.0
Salicylic Acid	2.0 to 5.0
Alcohol (70% by weight)	100.0

Sig.: Apply with cotton once or twice daily.
(Alcohol prepared 70% by weight is much more effective in killing pyococci says Dr. Pillsbury.)

Castellani's Carbol Fuchsin Stain 1/2 to full strength.
Sig.: Paint on affected skin once daily.

Whitfield's Ointment N. F. diluted to 1/4 or 1/2 strength with Petrolatum or Ung. Aqua Rosae. Frequently 0.25 per cent to 1 per cent thymol is added.
Sig.: Apply every night.

Pwd. Camphor	5. Gm.
Pwd. Salicylic Acid	3. Gm.
Pwd. Titanium Oxide U. S. P.	5. Gm.
Pwd. Boric Acid	20. Gm.
Talc *q. s.*	100. Gm.

Sig.: Dust on feet every morning.

Potassa Sulphurat	250.

Sig.: Break up with hammer and add contents of full teaspoonful to 1 quart to 1 gallon of hot water for foot soaks ten minutes every night.

Dr. Schoch prescribes an ointment of 3 per cent boric acid and 2 to 5 per cent of ammoniated mercury in a cold cream base for use each morning, and an ointment of 1 1/2 per cent thymol, 3 per cent salicylic acid and 6 per cent benzoic acid in a cold cream base for use at night.

Dr. Shelmire prescribes 6 to 10 per cent salicylic acid in alcohol, modified Whitfield's Ointment, or a 2 to 10 per cent chrysarobin ointment. In thickened ringworm he uses 10 to 40 per cent salicylic plasters.

Dr. Smith prescribes the application of modified Whitfield's Ointment at bedtime and the use of a fungicidal foot powder in the morning. Formulas for these preparations are given under the "Treatment of Acute Stages" in this article.

He recommends that the patient continue this treatment for about two months after he thinks he is well.

Dr. Swartz prescribes warm boric acid solution soaks for 10 minutes in the morning, followed by dusting with Pro-Ped or the following powder:

Salicylic Acid	1.
Benzoic Acid	1.
Talc	30.

TO PREVENT INFECTION OF OTHERS AND REINFECTION OF SELF

1. Use separate towels.
2. Use wooden shoes or shower shoes that can be boiled.
3. Use white cotton socks, not wool. Boil socks for 15 minutes after use.
4. Sterilize shoes with a formaldehyde candle; or by leaving them with a sponge soaked in 10 per cent formalin in a closed container (do not wear them for 2 days after sterilization); or soak paper towels in formalin, and being careful to protect the hands, stuff the soaked paper towels into shoes, place them in a large paper bag and tie up with string, after 12 hours place shoes in the sun and air for at least 24 hours before using.
5. Avoid walking barefooted, especially on moist surfaces.
6. Do not share the bath mat with anyone else.
7. Wash out bathtub after use with a 2:100 solution of cresol, Lysol or a strong soap powder.
8. Keep feet as dry as possible.
9. Wear perforated, ventilated, leather-soled shoes in the summer.
10. Keep 2 pairs of shoes and wear them on alternate days to allow drying.
11. Remove soap thoroughly from feet, rinsing well in clear water.
12. Change socks during the day, if possible.
13. Purchase new shoes, if possible, and buy them 1/2 size longer to redistribute the points of pressure.
14. Reduce the amount of walking you do.
15. Have other members of the household use a weak fungicidal foot powder regularly.
16. Mop bathroom floors with a weak fungicidal solution.
17. Wax all wood floors in the house.
18. Launder bedroom rugs frequently, if possible.

He recommends another warm boric acid soak at night, followed by the application of either of the following ointments:

Mercurochrome crystals	gr. x to xx
Water	m. xx
Salicylic Acid	ʒ ss
Petrolatum	
Lanolin aa	*q. s.* ʒ i

Salicylic Acid	gr. xv
Benzoic Acid	gr. xxv
Petrolatum	ʒ ii
Cocoanut Oil	*q. s.* ʒ i

(One per cent of Thymol may be added.)

Dr. Swartz also uses Tincture Metaphen (Abbott), for the webs of the toes.

Dr. Wieder prescribes a modified Whitfield's Ointment to which colloidal sulfur has been added. Occasionally he uses an ointment of iodine, oil of clove and oil of cinnamon. For inflammatory cases he prescribes boric acid ointment with the addition of 1 to 3 per cent of salicylic acid. The localized patchy type case occasionally is treated with 4 to 8 per cent of salicylic acid in 70 per cent alcohol.

TREATMENT OF CHRONIC CASES

Dr. Epstein prescribes one-half strength Whitfield's Ointment made with a base of 10 per cent white boric ointment.

Dr. Loveman advises the use of a mild desicating dusting powder and one-half strength Whitfield's Ointment once or twice a week.

Dr. Pillsbury prescribes one of the following four preparations:

Ung. Anthralin (Abbott) ..... 0.1 to 1.%
Sig.: Apply sparingly every night.

Salicylic Acid	
Ppt. Sulfur aa	1.2 to 3.0
Liq. Carb. Deterg	7.0
Aquaphor	60.0

Ung. Supertah (Tailby-Nason) .. 5 to 10%
Sig.: Apply every night.

Tincture of Iodine	7.5
Aqua Camphor	30.0

Sig.: Paint on affected skin nightly.

TO PREVENT RECURRENCES

Dr. Epstein advises patients to continue local therapy for 2 weeks after all clinical evidence of the disease has cleared, and he recommends the use of the following powder, twice a day, between the toes and scattered in the socks or stockings:

Salicylic Acid	10 gr.
Benzoic Acid	20 gr.
Talc	*q. s.* 1 oz.

Dr. Lewis prescribes 1 per cent thymol in talc, to be applied liberally twice a day.

Dr. Smith prescribes the use of a drying dusting powder and the occasional application of either a saturated alcoholic solution of salicylic acid or formalin.

Dr. Swartz prescribes dusting with Pro-Ped or the following powder:

Salicylic Acid	1.0
Benzoic Acid	1.0
Talc	30.0

Dr. Wieder prescribes the use of a fungistatic dusting powder.

GENERAL OBSERVATIONS

Most of the specialists agreed that the usual case of athlete's foot shows sufficient clinical improvement in 2 to 6 weeks to be discharged, but stated that some cases require months or years.

Of the nine physicians, 5 expressed the belief that athlete's foot can be cured in the sense of complete mycologic sterilization, 3 did not believe it could and 1 thought it was only rarely cured.

The majority expressed the opinion that recurrences of the disease may be due to exogenous infection, autogenous infection, or flare-ups of dormant infections; four stressed the belief that flare-ups cause most.

Individual specialists said that from 3 to 50 per cent of their athlete's foot patients had secondary eczematous eruptions of the hands.

One dermatologist, Dr. Pillsbury, commented on the fact that very few cases of athlete's foot are seen among young children. He made the observation that the incidence of the disease rises in children at or near puberty. He also cited the greater prevalence of the disease among adult males than adult females, and suggested the possibility of some endocrine linkage.

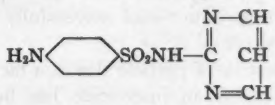
Sulfadiazine

RECENT STUDIES CONFIRM EARLY REPORTS OF THE LACK OF NAUSEA, RASH AND OTHER SIDE-ACTIONS ACCOMPANYING THE USE OF THIS NEWEST OF THE SULFONAMIDES

NEWEST of the sulfonamide drugs, not yet released for general use but being subjected to extensive clinical trial at the Johns Hopkins Hospital and elsewhere, is sulfadiazine. Although it is too early to evaluate accurately its therapeutic value it appears to be slightly less effective than sulfapyridine or sulfathiazole in the treatment of pneumococcic pneumonia and to be of definite value in the treatment of hemolytic streptococcus and staphyloccic infections.

It is not greater effectiveness against the streptococcus, pneumococcus and staphylococcus that is attracting attention to this new sulfonamide drug, however, but the comparative freedom from side-actions and toxic effects accompanying its administration. Of 252 patients treated with the new drug at Johns Hopkins up to May 15, 1941, only 2 had vomited after its administration, only 4 had developed a rash and only 2 had developed a drug fever. Although no evidences of kidney injury were observed in the early cases, further experience has uncovered two cases of hematuria which disappeared when the drug was discontinued. High concentrations of the drug in the blood are achieved easily and can be maintained for long periods of time without disturbing the appetite or producing untoward results.

Sulfadiazine has the following formula:



Its chemical name is 2-sulfanilamidopyrimidine and it probably would have been called sulfapyrimidine were it not for the confusion which would result between this name and sulfapyridine. The name sulfadiazine was given to the chemical when it was first investigated and the Council on Pharmacy and Chemistry has recognized this non-proprietary name.

Dr. Perrin H. Long, of The Johns Hopkins University, Baltimore, has prepared a report on this new drug which appeared in the *Journal of the American Medical Association* for May 24th. In this report Dr. Long describes the following characteristics of sulfadiazine based on his studies:

1. It appears that the drug is somewhat less rapidly absorbed from the intestines than are sulfanilamide, sulfapyridine or sulfathiazole (although others have reported the opposite).
2. It appears to be excreted less rapidly than sulfanilamide or sulfapyridine. (This would tend to give more prolonged action.)
3. In the urine only about one-third of the drug exists in the acetylated form. (This contrasts with the acetylation and inactivation of 50 to 75 per cent of sulfapyridine.)
4. The acetylated form of sulfadiazine is very soluble and, therefore, is easily excreted in the urine. (This lessens the possibility of kidney damage.)
5. It passes over into the spinal fluid in concentrations of from $^2/_3$ to $^4/_5$ of concentrations in the blood. (This is important in the treatment of meningitis.)
6. Adequate blood concentrations are easily achieved, in fact, care must be exercised to avoid unnecessarily high concentrations.

If further study substantiates the reported lack of nausea, vomiting and other side-actions accompanying the use of sulfadiazine it should prove to be a most valuable drug. The side-actions of sulfanilamide, sulfapyridine and sulfathiazole have been most distressing to patients and in some cases the use of the drugs has had to be discontinued because the patient could not tolerate them. A less effective but better tolerated drug would be an improvement in sulfonamide therapy for the difference in action could be easily adjusted by the dosage.

SCIENCE WARS ON INSECT PESTS

by RICHARD A. DENO, Ph.D.

ASSOCIATE PROFESSOR OF BIOLOGICAL SCIENCES, RUTGERS UNIVERSITY COLLEGE OF PHARMACY

RESEARCH SEEKS NEW MEANS OF COMBATING CROP DESTRUCTION, INJURY TO ANIMALS AND SPREAD OF DISEASE CAUSED BY CHEWING, SUCKING AND BITING INSECTS

WELL known to pharmacists is the damage that may be caused by the drug store beetle. This annoying pest will eat nearly any dry plant or animal product and is but one of several insects that may be destructive in pharmacies.

Not so well known are the total damages done annually by insects nor the extensive studies under way in governmental, industrial and university laboratories to reduce the annual toll. Competent entomologists estimate that in America alone harmful insects nullify the labor of one million men. The annual loss due to crop destruction, injury to domesticated animals, and production of disease in man is estimated to be around one and one-half billion dollars—enough to pay for sixteen 30,000-ton battleships, with money left over sufficient to buy a couple of airplane carriers.

Fully aware of the menace from insects are the hundreds of scientists who seek to develop means of more successfully combating these pests. In a recent number of the *News Edition*, published by the American Chemical Society, Dr. C. H. Richardson, Professor of Entomology at Iowa State College, discusses some of the investigations being made to learn more about the characteristics of insects and the chemicals which can be used with safety to exterminate them. From this report the extreme diversity of research in entomology is evident.

STOMACH POISONS

Insecticides which are swallowed to produce death are termed stomach poisons. By applying sprays, dusts or dips to plant parts that insects chew on, the poison is introduced into the digestive system of the pest. Insects against which stomach poisons are effective are those with chewing mouth parts rather than with the piercing-sucking type. If the plants that are attacked show leaves riddled with holes, a stomach poison is the type to use. Potato bugs are an example of chewing insects against which stomach poison insecticides are effective.

Sometimes stomach poisons are used to poison bait. Grasshoppers, cutworms and army worms are controlled by using poisoned food which is more attractive than their regular food. In still other cases, as with cockroaches and the cotton boll weevil, the insects pick up on their legs and antennae the chemical from the plants. In cleaning their appendages the poison is swallowed and produces its toxic effect.

The most widely used of the stomach poison insecticides are compounds of arsenic and fluorine. Arsenate of lead, calcium arsenate and Paris Green (aceto-arsenite of copper) are the most widely used arsenicals. Paris Green is the oldest, having been widely used for over seventy-five years, but it has been largely replaced by the other two arsenic insecticides. Objections to Paris Green are its tendency to burn foliage and its poor adhesive qualities. Basic copper arsenate has been used recently with marked success against the velvet bean caterpillar and was found to possess excellent adherent qualities. Another newer arsenical which gives promise is aluminum arsenate—used successfully in spraying grapevines.

The question of particle size as a factor in the effectiveness of an insecticide has been given considerable prominence. In the case of arsenate of lead so-called colloidal forms have been marketed, but experimental and practical tests do not indicate a marked superiority over the older powdered form. The colloidal preparations do not discolor the foliage so badly as powdered arsenate of lead, a point in their favor when they are used on decorative shrubs, but of no significance in a potato patch. With Paris Green the finer the particles the higher the insect mortality when used against the Mexican

Testing contact insecticides against house flies in the laboratories of the U. S. Department of Agriculture. The drums are placed over cages containing flies and measured samples of the material being tested are poured into a thistle tube leading to a spray gun.
U. S. D. A. Photo

bean beetle larvæ. So important is particle size here that entomologists have had better results with a very fine Paris Green having a lower content of water-soluble arsenic than they have with a more potent Paris Green of larger sized particles.

Phenothiazine, whose interesting story was reported in the March number of this JOURNAL, has been tried against a variety of pests, including the breeding of the hornfly in cattle. Cattle have been medicated with the drug and their droppings rendered unsuitable for the breeding of the flies.

An evaluation of American hellebore, *Veratrum viride*, long used as an insecticide, has been made by Fisher, who recommends the use of the alkaloids rather than the powdered drug. He found that the alkaloids are stable and about five times as toxic as arsenic trioxide, but that commerical samples of the entire drug were extremely variable in their performance. This emphasizes the need for adequate standardization methods.

CONTACT POISONS

Contact poisons are those chemicals which damage insects by means other than being swallowed. Insects with piercing-sucking mouth parts get their nourishment from beneath the surface of plants and are, therefore, not poisoned by toxic agents that have been dusted or sprayed on the leaves and stems. Here the chemical must strike the insect which absorbs it through the cuticle or the breathing pores. Eight or ten pairs of these pores are located along the sides of the body, and when the insecticide enters the pores, it is distributed to the internal parts where it produces the toxic action. Some substances clog the pores sufficiently to interfere with breathing and thus smother the insect. Infected plants whose leaves are wilted, yellowed, white spotted or curled are probably being damaged by sucking insects and require a contact poison.

Prophylactic measures are of little value here because the poison must come in actual contact with the insect when it is applied. Some contact poisons are effective against chewing insects, but stomach poisons are rarely of value in the control of those with piercing-sucking mouth parts. The most widely used contact poisons are preparations of nicotine, lime-sulfur, oil emulsions, pyrethrum and plants which contain rotenone (chiefly derris, cubé and timbo). The latter are tropical plants grown in Brazil and other South American countries. The roots and bark are used in powdered form, mixed with a diluent, or are extracted in water and sprayed on.

The importance of fundamental research in insect physiology is readily seen where contact poisons are used. Studies on the permeability of the insect cuticle bear directly on the effectiveness of various contact poisons. In England, Hurst has found the outer part of the cuticle, fatty in nature, to be impermeable to certain chemicals, and the underlying parts to be more permeable. He has further shown that certain mixtures penetrate much better than a particular pure chemical, so that each constituent of a poisonous mixture may contribute to the harmful effect even though, alone, one may be of little value.

FUMIGANTS

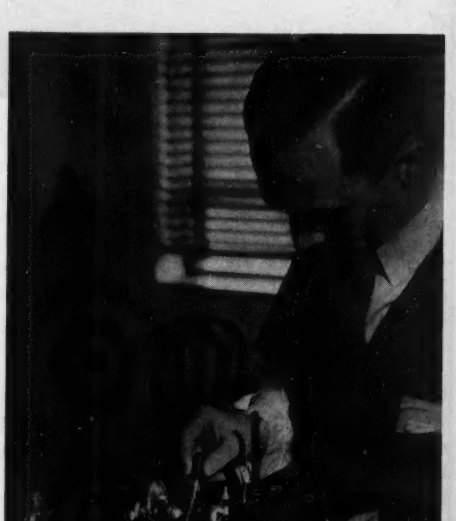
Poisons effective in gaseous form, usually in a tight enclosure, are classified as fumigants. They produce their effect either on the nerve centers of the insect or the breathing organs. The most deadly is hydrocyanic acid gas. Others in this category are carbon disulfide, nicotine preparations, sulfur dioxide from burning sulfur and the widely used paradichlorobenzene which volatilizes from the crystals. Smoke from burning pyrethrum or derris is also effective and widely used. Fumigants are useful against both types of insects—the chewing and the piercing-sucking—but the importance of a tightly sealed enclosure is frequently overlooked in household use. Formaldehyde, formerly used extensively in fumigation against bacteria, but of questionable value, is of no use as a fumigant against insects.

The use of methyl bromide as a fumigant is increasing, and there are several reports on its effectiveness. It has been used successfully against the Japanese beetle, the apple maggot, the Indian meal-moth and many other insects. A study on the toxicity of methyl bromide to higher animals was made by scientists of the Dow Chemical Company. They report that the gas is definitely toxic to man (as are many other insecticides), but that it may be used without danger to health if proper precautions are observed.

REPELLENTS

Substances which may be non-poisonous or only mildly toxic, but which make the food or surroundings unattractive to insects, are termed repellents. They are used on both plants and animals but are rarely, if ever, repellent to all kinds of insects.

Bordeaux mixture, composed of water, hydrated lime and copper sulfate in varying proportions, is repellent to many insects when sprayed over plants. It is also a fungicide and is sometimes fortified by the addition of arsenate of lead.



U. S. D. A. Photo

Dr. Yeager, of the U. S. Department of Agriculture staff, tests a nicotine mixture by applying it to the heart of a cockroach.

Dr. H. L. Haller, chemist of the Bureau of Entomology and Plant Quarantine, isolates the insecticidal principles from plants and studies their synthesis.

U. S. D. A. Photo by Killian

Creosote and related phenolic compounds are used successfully in the soil for diverting migrating hordes of certain insects such as chinch bugs. They are also effective in repelling termites when the chemical has been allowed to soak into wood. Naphthalene flakes and balls are used as repellents but are not so effective against moths as some other chemicals.

Mosquito repellents are sought after at this season, and at Rutgers University, Granett has tested several hundred on humans. He has found one mixture more effective than the widely used Oil of Citronella. Consisting of 65 per cent diethylene glycol monobutyl ether acetate and diethylene glycol monoethyl ether, 28 per cent alcohol and 7 per cent corn oil, this mosquito repellent was found to be free from poisonous or injurious properties as ordinarily used. It was also the most effective against black flies, sand flies, stable flies, deer flies and chiggers. Frequent applications were found to be necessary when the mixture was used against these various flies. Pyrethrum mixtures were found to be much lower in repellent value than either the glycol solution or Oil of Citronella.

Chemical analysis of certain mixtures is an unreliable indication of their insecticidal action. Fly sprays used on livestock, for example, may show great variation in effectiveness despite apparent uniformity in constituents. It is nothing new to a farmer to have a brand of a spray that he has been using for years suddenly lose its effectiveness.

Hence attempts are being made to find standardized biological methods for evaluating insecticides. Such methods have been developed for household products.

For specific information on insecticides, the United States Department of Agriculture has innumerable bulletins, and in most cases the individual states have an entomological service available at little or no cost. In many instances problems of insect control vary from state to state, so local advice is essential if the insecticides are to be used intelligently. A well-informed pharmacist, particularly in a rural community, can be of real service to his customers and bring increased business to his store by spending a little time in acquainting himself with the insect problems of his community and their solution.

THE PHARMACIST'S ROLE IN THE TREATMENT OF INFLUENZA

THERAPY OF COOK COUNTY HOSPITAL, PUBLISHED IN A. M. A. JOURNAL UNDER THE EDITORIAL SUPERVISION OF DR. LEROY H. SLOAN, MAY BE USED AS A GUIDE BY PHARMACISTS IN DETAILING PHYSICIANS AND IN GIVING SOUND ADVICE IN REPLY TO CUSTOMERS' QUESTIONS

THE terms "influenza," "flu," "la grippe" and "grip" have been used rather loosely for many years to describe a number of types of respiratory diseases; but each succeeding epidemic has provided an opportunity to study the disease further, and more and more is being learned of its cause, clinical characteristics and treatment. The virus causing at least one type of influenza has been isolated, cultured and differentiated from the virus which causes the common cold, but there are still many questions to be answered concerning those types of influenza which are caused by multiple infections.

Influenza is largely a self-limited disease and, if complications do not develop, it will usually run its course and clear up without specific treatment. The management of influenza therefore, consists of (1) careful nursing to prevent the development of complications, and (2) symptomatic treatment to relieve the distressing characteristics of the disease . . . the sore throat, headache, aching pains, cough, clogged nasal passages and conjunctivitis.

Dr. George W. Scupham, of Chicago, presents a comprehensive review of the therapy of influenza as practiced at the Cook County Hospital, in the May 17th issue of the *Journal of the American Medical Association* (116, 20, 2264–2268). His review may well be used as a guide to pharmacists in serving physicians and their patients. Dr. Scupham's outline of the types of medication used at the hospital should be made the basis of detailing calls and should be brought to the attention of physicians who solicit advice on the relief of specific symptoms of the disease. Dr. Scupham's discussion of how the patient should be cared for, the use of disposable tissues for nasal secretions, the temperature at which the patient's room should be maintained, etc., provides the pharmacist with the information he needs to give competent advice to the families of patients. The busy physician often neglects to give the patient's family detailed directions concerning the care of the sick person and the family asks the pharmacist "should they do this" or "how they should do that?" The pharmacists has a real opportunity to render an important professional service by giving accurate advice.

The following are the essentials of the Cook County Hospital Therapy of influenza as described by Dr. Scupham:

Prophylaxis.—Influenza is a highly contagious disease, especially in its early stages before the illness becomes well defined. At the first signs of chills, aching pains, headache and fever a physician should be called and the patient should be isolated in a room from which all but required furniture has been removed. Those taking care of the patient should wear masks and should wash their hands thoroughly with soap and water after contact. Dishes used by the patient should be sterilized by boiling. Discharges from the nose and sputum should be collected in disposable tissues, placed in a paper bag at the bedside, and the bags collected and burned at frequent intervals.

Treatment.—The patient should remain in bed for 4 or 5 days after the fever has disappeared.

The patient's room should be kept at 68° F., taking care to avoid sudden changes in room temperature which produce throat irritation and coughing.

A daily fluid intake of 3000 to 4000 cc. should be maintained with water, sweetened fruit juices and palatable carbonated beverages. Laxatives, if necessary, should be mild. Four drams of liquid petrolatum, 20 grains of heavy magnesium oxide or a small saline enema may be given at night. One or two drams of aromatic fluidextract of cascara, or a glycerin suppository may be given in the early morning.

Throat irritation and soreness usually can be controlled with mild alkaline gargles such as the following:

(1) Alkaline aromatic solution.

(2) Warm physiologic salt solution.

(3) Two drams of sodium chloride and one dram of sodium bicarbonate in 1000 cc. of water.

(4) Sodium bicarbonate 1.2 Gm. in 120 cc. of Antiseptic Solution, N. F., used half-strength.

(5) Sodium bicarbonate and sodium biborate, 1.2 Gm. of each in cinnamon water *q. s.* 120 cc.

(6) Dobell's Solution, N. F.

Nasal obstruction frequently becomes a very distressing symptom to the patient. It can be relieved by the use of a nasal spray of 2 per cent ephedrine sulfate in physiologic solution of sodium chloride. Amphetamine (Benzedrine) inhalers may be used with caution. Inhalations of steam relieve nasal and throat irritation; 15–30 drops of a 10 per cent solution of menthol in alcohol, or 1 dram of compound tincture of benzoin may be added to a pint of boiling water.

Headache and aching pains may be relieved with either 10 grains of acetylsalicylic acid or 5 grains of acetophenetidin, every four hours. A combination of 5 grains of acetylsalicylic acid and 5 grains of acetophenetidin may be given every 6 hours, if preferred. Another effective combination is as follows:

Acetylsalicylic Acid	4 gr.
Codeine Sulfate	1/4 gr.
Citrated Caffeine	1/2 gr.
Phenobarbital	1/4 gr.

Sig.: One dose every 4 hours.

Rest is of the greatest importance in the treatment of influenza and if the patient is very uncomfortable and restless 1/2 grain of phenobarbital 3 or 4 times a day may be given.

Coughing is often a distressing symptom of influenza. Stimulating cough mixtures to raise phlegm include the following:

Ammonium Carbonate	5. Gm.
Anise Water	12. cc.
Syrup of Acacia, N. F., *q. s.*	60. cc.

Sig.: One teaspoonful every 4 hours.

Ammonium Chloride	5. Gm.
Syrup of Ipecac	15. cc.
Syrup of Glycyrrhiza, N. F., *q. s.*	60. cc.

Sig.: One teaspoonful in water every 2 hours.

BOOKLETS FOR DISTRIBUTION

Pharmacists can render an important public health service in their communities by distributing booklets which give sound advice on the subject of influenza.

At the request of the AMERICAN PHARMACEUTICAL ASSOCIATION, the United States Public Health Service has consented to supply limited quantities of its sample booklet, shown at the right, on the request of pharmacists. Address your request to the Service at 19th and Constitution Avenue, N. W., Washington D. C.

• • • but flu is tougher

Ammonium Chloride..... 10. Gm.
Syrup of Cherry, N. F., *q. s.*..... 120. cc.
Sig.: One teaspoonful in a cup of water every 2 hours.

Syrup of Hydriodic Acid..... 15. cc.
Syrup of Cherry, N. F., *q. s.*..... 60. cc.
Sig.: Two teaspoonfuls in a cup of water every 4 hours.

Sedative cough mixtures such as the following, may be prescribed to relieve an irritating, hacking, dry cough:

Codeine Phosphate..... 0.25 Gm.
Syrup of Cherry, N. F., *q. s.*.....60.00 cc.
Sig.: One teaspoonful in water every 3 hours.

Codeine Phosphate..... 0.5 Gm.
Syrup of Tolu..... 60.0 cc.
Syrup of Wild Cherry, *q. s.*.....120.0 cc.
Sig.: One teaspoonful in water every three or four hours.

Elixir of Terpin Hydrate with Codeine
Sig.: One teaspoonful every 2 to 3 hours (for a severe cough).

Codeine Phosphate..... 0.5 Gm.
Aromatic Syrup of Eriodictyon, N. F., *q. s.*.....60.0 cc.
Sig.: One teaspoonful in water every 2 to 4 hours.

Tablets of codeine phosphate or sulfate, in $\frac{1}{4}$ to $\frac{1}{2}$ grain doses, may be prescribed.

OTHER MEDICATIONS

A capsule of $\frac{1}{4}$ grain of papaverine hydrochloride and $\frac{1}{4}$ grain of codeine sulfate (Copavin, Lilly—Ed.) has been used in the treatment of the common cold and should be useful in the early stages of exudative influenza.

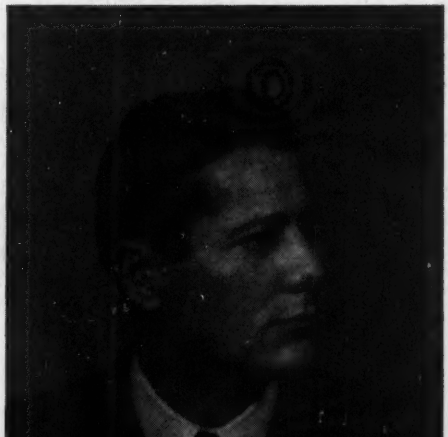
Ten grains of Dover's Powder, taken with hot lemonade, may be used for diaphoresis and sedation.

Conjunctivitis, which sometimes develops, is usually relieved by warm or cold moist boric acid compresses.

For flatulence, Dr. Scupham recommends a bland diet, well-cooked low-starch vegetables and fruits; avoiding an excess of liquids; substituting hot fluids for cold and the addition of solid food to the diet relatively early. The application of heat to the abdomen gives relief, and tincture of belladonna, 7 to 10 minims three to four times a day, may be given.

One of the late complications of pandemic influenza has been epidemic encephalitis or encephalomyelitis and physicians are studying the use of vitamin E, maximum doses of the vitamin B complex and the hypodermic administration of 15 mg. of thiamin chloride daily to combat such complications.

Pharmacists should stress the need for calling a physician in the first stages of the disease in order that he may keep a careful watch for signs of threatened complications and take prompt steps to prevent their development.



Dr. Theodore G. Klumpp, Chief of the Drug Division of the Food and Drug Administration, Washington, D. C., has been appointed Secretary of the Council on Pharmacy and Chemistry, Director of the Chemical Laboratory and Director of the Division of Foods, Drugs and Therapy of the American Medical Association. He succeeds Dr. Paul Nicholas Leech, deceased.

Druggists' Digest

OF NEW FORMULAS, RECENT PHARMACEUTICAL DEVELOPMENTS, AND OTHER PROFESSIONAL DATA

NEW CHEMICAL STOPS ITCH OF POISON IVY AND INSECT BITES

The itching of poison ivy dermatitis and insect bites is promptly relieved by the application of finely powdered benzoyl persulfide, according to Drs. S. Amberg and L. A. Brunsting, of the Mayo Clinic. The chemical has no bacteriostatic action and is intended for no other purpose than to relieve the itching.

Benzoyl persulfide is prepared as follows:

Two hundred cc. of a 10 per cent solution of potassium hydroxide in absolute alcohol is saturated with dry hydrogen sulfide while cooling. To this solution, 25 cc. of benzoyl chloride are added slowly with much shaking, and the mixture is kept cool. The mixture is allowed to stand several hours, at the end of which time the precipitate that has formed is filtered off. A saturated solution of iodine in absolute alcohol is added to the acid filtrate, at first rapidly, then slowly, until a persistent yellowish color indicates an excess of iodine (approximately 95 cc. of iodine solution is used). The persulfide is collected on a filter, washed with absolute and diluted alcohol, and finally with water. It is then dried in the air and can be used without further purification. If desired, the chemical can be purified by successive recrystallization from a hot alcohol or hot acetone solution. The iodine, used as an oxidizing agent in the preparation, can be recovered.

Crystals of benzoyl persulfide are white and are insoluble in water. They are 30 per cent soluble in ichthyol. The chemical is used in the form of a fine powder which is applied to the sites by gentle rubbing; therefore, it must be free from grit. The powder may develop a pink color on standing, apparently without destroying its effectiveness.

When applied to cases of dermatitis produced by poison ivy the itching was intensified for a few minutes and then ceased entirely and did not recur for a period of 4 to 6 hours, permitting normal work or sleep. It has proved effective in cases where lotions and wet dressings have failed to give relief.

Usually but one application of the powder is sufficient to relieve the itching of mosquito and sand flea bites.

The powder was used in other cases of pruritus such as that of neurodermite, lichen planus, dermatitis herpetiformis, atopic dermatitis, and pruritus of the vulva and anus with little or no relief. Applied to the vulva and anus the powder was irritating.

—*Military Surgeon, 88, 6 (June 1941), 617-621*

OINTMENT OF SULFANILAMIDE—ALLANTOIN

Physicians serving the indigent classes find the treatment of pyogenic infections a major problem. Such groups neglect minor injuries during the period of bacterial contamination and do not seek medical aid until their wounds are badly infected. Postoperative infections are also more common among these patients than among the private patient class.

To Drs. J. R. Veal and R. G. Klepsser, of Gallinger Memorial Hospital, Washington, D. C., sulfanilamide seemed the answer to their search for a simple and effective means of controlling local pyogenic infections. Since sulfanilamide administered orally or parenterally has failed to be effective in the treatment of supporative lesions, they introduced the drug directly into the wounds.

Regardless of whether the wounds contained streptococcus, staphylococcus, the colon group, diphtheroids, *B. pyocyaneus* or a combination of

these organisms, sulfanilamide caused immediate inhibition of growth, as judged by smears, plated colony counts and the gross appearance of the exudates. A single application of the drug was not sufficient to prevent a revival of growth but daily doses for 8 days rendered the wounds practically sterile. The treatment was used on 140 cases of infected operative wounds, infected burns, compound fractures, leg ulcers, decubitus ulcers and infected traumatic wounds.

Biopsies showed, however, that although a rapid control of the bacterial invasion was achieved, there was often a retarding of the healing process. The granulation tissue seemed inactive, dry, pale, sluggish and poorly vascularized. Apparently the continued application of a high concentration of sulfanilamide has a deleterious effect on normal cellular activity.

The physicians sought a method of providing a weaker sulfanilamide application. Aqueous solutions were ineffective because sulfanilamide is so insoluble that a solution of sufficient concentration cannot be prepared. Oil suspensions were unsatisfactory because a constant strength of sulfanilamide could not be obtained. Ointments with various inert bases were tried but the granulation tissue still did not react very favorably. Recalling the excellent stimulating effects of allantoin on non-healing wounds, they decided to combine it with sulfanilamide in an ointment of the following composition:

Sulfanilamide	10	per cent
Allantoin	2	per cent
Chlorobutanol	0.5	per cent
Greaseless base, *q. s.*		

The base was a glycerinated stearic acid ointment with triethanolamine.*

The wounds receive careful and complete debridement. Sutured wounds are opened widely. Pus pockets are drained. All necrotic and devitalized tissue is removed. This preparation is necessary because the sulfanilamide must come into actual contact with the bacteria.

A sufficient amount of sulfanilamide powder is instilled to cover the diseased tissue completely. The amount of drug necessary depends upon the area of the lesion, sometimes as much as 7 to 15 Gm. are used for one application. When the powder has been placed in the wound, a sterile gauze dressing is applied. A fresh sulfanilamide dressing is applied daily until the purulent exudate ceases and the infection is under control, usually 4 to 6 days. The sulfanilamide-allantoin ointment is then substituted for the sulfanilamide powder, being spread over the entire infected area and covered with gauze or oiled silk. The dressings are changed daily.

The treatment has proved highly effective and there have been no evidences of constitutional toxic reactions from the topical use of the sulfanilamide.

—*Med. Annals of D.C., 10, 2 (Feb. 1941), 61–63*

* The ointment was prepared by the National Drug Company of Philadelphia.

SULFANILAMIDE AND IMPAIRED JUDGMENT

Calling attention to the fact that many drugs influence the physiologic mechanisms, psychomotor reactions or judgment of persons who take them, the *Journal of the American Medical Association* (116, 20, (May 17, 1931), 2279–2280) warns that patients engaged in mechanical work of any kind should be relieved of their responsibilities when taking sulfanilamide. It is further recommended that patients taking this drug be cautioned to stay at home and rest, not be permitted to drive an automobile and advised not to make any important decision or sign any papers while under the influence of the drug. Physicians have previously ruled that airplane pilots must not fly until four days have elapsed after treatment with sulfanilamide.

BENZEDRINE RELIEVES MILD CASES OF DYSMENORRHEA

Benzedrine sulfate in small doses is an excellent drug in the relief of mild cases of dysmenorrhea, painful menstruation, but is of very little benefit in severe cases, according to Dr. Walter J. Larkin, of Scranton, Pa. By questionnaire Dr. Larkin found that of 366 student nurses in nearby hospitals, 191, or 52.1 per cent, suffered from dysmenorrhea. Of the 191, 134 who underwent

Code of Ethics

OF THE

American Pharmaceutical Association

The Duties of the Pharmacist in Connection with His Service to the Public

PHARMACY has for its primary object the service which it can render to the public in safeguarding the handling, sale, compounding and dispensing of medicinal substances. ¶The practice of pharmacy demands knowledge, skill and integrity on the part of those engaged in it. Pharmacists are required to pass certain educational tests in order to qualify under the laws of our states. The states thus restrict the practice of pharmacy to those persons who by reason of special training and qualifications are able to qualify under regulatory requirements and grant to them privileges necessarily denied to others. ¶In return the states expect the Pharmacist to recognize his responsibility to the community and to fulfill his professional obligations honorably and with due regard for the physical and moral well-being of society. ¶The Pharmacist should uphold the approved legal standards of the United States Pharmacopoeia and the National Formulary for articles which are official in either of these works, and should, as far as possible, encourage the use of these official drugs and preparations and discourage the use of objectionable nostrums. He should sell and dispense only drugs of the best quality for medicinal use and for filling prescriptions. ¶He should neither buy, sell nor use substandard drugs for uses which are in any way connected with medicinal purposes. ¶The Pharmacist should be properly remunerated by the public for his knowledge and skill when used in its behalf in compounding prescriptions, and his fee for such professional work should take into account the time consumed and the great responsibility involved as well as the cost of the ingredients. ¶The Pharmacist should not sell or dispense powerful drugs and poisons to persons not properly qualified to administer or use them, and should use every proper precaution to safeguard the public from poisons and from all habit-forming medicines. ¶The Pharmacist, being legally entrusted with the dispensing and sale of narcotic drugs and alcoholic liquors, should merit this responsibility by upholding and conforming to the laws and regulations governing the distribution of these substances. ¶The Pharmacist should seek to enlist and merit the confidence of his patrons and when this confidence is won it should be jealously guarded and never abused by extortion or misrepresentation or in any other manner. ¶The Pharmacist should consider the knowledge which he gains of the ailments of his patrons and their confidences regarding these matters, as entrusted to his honor, and he should never divulge such facts unless compelled to do so by law. ¶The Pharmacist should hold the health and safety of his patrons to be of first consideration; he should make no attempt to prescribe or treat diseases or strive to sell drugs or remedies of any kind simply for the sake of profit. ¶He should keep his pharmacy clean, neat and sanitary in all its departments and should be well supplied with accurate measuring and weighing devices and other suitable apparatus for the proper performance of his professional duties. ¶It is considered inimical to public welfare for the Pharmacist to have any clandestine arrangement with any Physician in which fees are divided or in which secret prescriptions are concerned. ¶The Pharmacist should primarily be a good citizen, and should uphold and defend the laws of the state and nation. He should inform himself concerning the laws, particularly those relating to food and drug adulteration and those pertaining to health and sanitation and should always be ready to coöperate with the proper authorities having charge of the enforcement of the laws. ¶The Pharmacist should be willing to join any constructive effort to promote the public welfare and he should regulate his public and private conduct and deeds so as to entitle him to the respect and confidence of the community in which he practices.

The Duties of the Pharmacist in His Relations to the Physician

THE Pharmacist even when urgently requested so to do should always refuse to prescribe or attempt diagnoses. He should, under such circumstances, refer applicants for medical aid to a reputable legally qualified Physician. In cases of extreme emergency as in accident or sudden illness on the street in which persons are brought to him pending the arrival of a Physician such prompt action should be taken to prevent suffering as is dictated by humanitarian impulses and guided by scientific knowledge and common sense. ¶The Pharmacist should not, under any circumstances, substitute one article for another, or one make of an article for another in a prescription, without the consent of the Physician who wrote it. No change should be made in a Physician's prescription except such as is essentially warranted by correct pharmaceutical procedure, nor any that will interfere with the obvious intent of the prescriber as regards therapeutic action. ¶He should follow the Physician's directions explicitly in the matter of refilling prescriptions, copying the formula upon the label or giving a copy of the prescription to the patient. He should not add any extra directions or caution or poison labels without due regard for the wishes of the prescriber, providing the safety of the patient is not jeopardized. ¶Whenever there is doubt as to the interpretation of the Physician's prescription or directions, he should invariably confer with the Physician in order to avoid a possible mistake or an unpleasant situation. ¶He should never discuss the therapeutic effect of a Physician's prescription with a patron nor disclose details of composition which the Physician has withheld, suggesting to the patient that such details can be properly discussed with the prescriber only. ¶Where an obvious error or omission in a prescription is detected by the Pharmacist, he should protect the interests of his patron and also the reputation of the Physician by conferring confidentially upon the subject, using the utmost caution and delicacy in handling such an important matter.

The Duties of Pharmacists to Each Other and to the Profession at Large

THE Pharmacist should strive to perfect and enlarge his professional knowledge. He should contribute his share toward the scientific progress of his profession and encourage and participate in research, investigation and study. ¶He should associate himself with pharmaceutical organizations whose aims are compatible with this code of ethics and to whose membership he may be eligible. He should contribute his share of time, energy and expense to carry on the work of these organizations and promote their welfare. He should keep himself informed upon professional matters by reading current pharmaceutical and medical literature. ¶He should perform no act, nor should he be a party to any transaction, which will bring discredit to himself or to his profession or in any way bring criticism upon it, nor should he unwarrantedly criticize a fellow Pharmacist or do anything to diminish the trust reposed in the practitioners of pharmacy. ¶The Pharmacist should expose any corrupt or dishonest conduct of any member of his profession which comes to his certain knowledge, through those accredited processes provided by the civil laws or the rules and regulations of pharmaceutical organizations, and he should aid in driving the unworthy out of the calling. ¶He should not accept agencies for objectionable nostrums nor allow his name to be used in connection with advertisements or correspondence for furthering their sale. ¶He should courteously aid a fellow Pharmacist who may request advice or professional information or who, in an emergency, needs supplies. ¶He should not aid any person to evade legal requirements regarding character, time or practical experience by carelessly or improperly endorsing or approving statements relating thereto. ¶He should not imitate the labels of his competitors nor take any other unfair advantage of merited professional or commercial success. When a bottle or package of a medicine is brought to him to be refilled, he should remove all other labels and place his own thereon unless the patron requests otherwise. ¶He should not fill orders which come to him by mistake, being originally intended for a competitor. ¶He should deal fairly with manufacturers and wholesale druggists from whom he purchases his supplies; all goods received in error or excess and all undercharges should be as promptly reported as are shortages and overcharges. ¶He should earnestly strive to follow all proper trade regulations and rules, promptly meet all obligations and closely adhere to all contracts and agreements.

treatment had mild cases that did not incapacitate them but did make them uncomfortable. Benzedrine sulfate relieved 89 of the 134, or 66.4 per cent. Twenty-five nurses with severe dysmenorrhea that included headache, sick stomach and usually necessitated them going to bed, underwent treatment but only 4, or 16 per cent, were relieved.

The nurses were given initial doses of ½ tablet (5 mg.) and told to return in two hours. If they were not relieved when they returned, they were given 1 tablet (10 mg.) and told to return in 4 hours if they still had cramps. If a girl failed to improve with 10 mg., however, a larger dose, as a rule, would not help her. Nervous, high-strung girls were not given the drug as it is contraindicated in such cases.

Dr. Larkin does not believe that the drug exerts an antispasmodic action on uterine muscle because, if it did, it would relieve severe dysmenorrhea which is assumed to be caused by a spasm in the uterine or cervical muscles. He feels that the beneficial results in mild dysmenorrhea are due chiefly to the stimulation that the drug gives to the tired or worried patient and the change of mood which it produces.

—Penn. Med. Jour., 44, 8 (May 1941), 994–997

DERRIS ROOT FOR SCABIES

Derris root, used in horticulture and agriculture as an insecticide, is effective against the parasite which causes scabies, according to Captain Leslie Saunders, of the Royal Army Medical Corps.

Captain Saunders uses a derris root powder, which contains about 10 per cent rotenone. He adds 4 ounces of the powder to 1 gallon of cold water and stirs the mixture thoroughly. The powder does not dissolve but forms a pale chocolate-colored suspension. Since the watery solution does not adhere well to the skin, 1 teaspoonful of soap flakes, such as Lux, is added to each ½ pint of the lotion.

Six applications are given, one in the morning, afternoon and evening on two consecutive days. The lotion is applied all over the body with particular attention to the hands, wrists, armpits and groins. When the lotion drys it leaves a thick coating of powder on the patient's skin and when he puts his clothes back on, the powder penetrates them and destroys any parasites that may be present. Of ninety cases treated with the derris root suspension by Captain Saunders, 83 were cured, 6 failed to report for check-up after two weeks and 1 case recurred. Some patients complain of a burning sensation after 4 or 5 applications and in some cases a mild dermatitis develops a few days after treatment, but usually disappears without treatment.

—Brit. Med. Jour., 4190 (April 26, 1941), 624–625

TANNIC ACID IN POISON IVY TREATMENT

Since the dermatitis caused by poison ivy is usually a vesicular eruption, and various dermatologists have suggested the use of wet dressings of tannic acid for the treatment of other types of vesicular dermatitis, Dr. Louis Schwartz, Medical Director, and Leon H. Warren, Acting Assistant Surgeon, of the United States Public Health Service, have developed a tannic acid treatment for poison ivy with the hope that physicians will try it. The authors have tested the new treatment on 11 cases and found that itching and discomfort stopped within 1 or 2 days and 9 patients had recovered at the end of 1 week. One case did not return for final observation and one case, suspected as having been caused by crab grass rather than poison ivy, was symptomatically well in 10 days but the remains of the eruption were present at the end of 2 weeks.

The first patient treated by the authors had an eruption limited to the calf of the leg. The dermatitis had been present for 2 weeks and had been treated uneffectively with calamine lotion containing phenol. The area was rubbed vigorously with a piece of gauze soaked in 95 per cent alcohol to remove the tops of the vesicles, the alcohol allowed to evaporate, the serum on the surface wiped off with gauze and a 10 per cent aqueous solution of tannic acid painted on. One-half hour later another application of tannic acid was painted on. The patient was given a 2-ounce bottle of tannic acid solution and di-

rected to apply the solution to the eruption twice daily. He was instructed to use alcohol-saturated gauze to rub the tops off of any new vesicles that appeared and to apply the tannic acid solution. The next day the lesion was crusted over, subjective symptoms were gone, no new vesicles appeared and in 1 week's time the crust had fallen off and the skin had become normal.

Appearance of vesicles after tops have been removed and tannic acid solution applied.

The eruptions in the other cases were more extensive and wet dressings were used instead of the painting procedure. The tops of the vesicles were rubbed off with alcohol-saturated gauze or were clipped off with scissors. Wet dressings of the tannic acid solution were applied for half-hour periods, once a day. In only one case did the pruritus fail to respond to a few applications of tannic acid solution and in this case the itching stopped when 3 per cent of phenol was added to the solution. The authors suggest that in cases of severe itching 1 to 3 per cent of phenol be added to the solution. In extensive cases not more than 1 per cent of phenol should be used on account of the danger of systemic absorption. In cases having blisters of sufficient size, the authors suggest that alcohol be applied and allowed to evaporate after the tops of the vesicles are removed and before the tannic acid solution is supplied.

—*Pub. Health Rep., 56, 20 (May 16, 1941), 1039*

COMBINED DIPHTHERIA—TETANUS INJECTIONS ADVISED

Fifty per cent of the deaths from tetanus are among children, probably because their cuts and scrapes are most likely to become infected from the soil. Tetanus may develop from very trivial injuries and the value of tetanus antitoxin, once the disease has developed, leaves much to be desired. Passive immunity may be achieved with prophylactic injections of the antitoxin if given promptly but many wounds are so slight that a physician may not be called to treat them and, even if he is, it is often difficult for him to decide whether to give the antitoxin or "take a chance" without it.

These considerations suggest the active immunization of children against tetanus in the same manner as active immunization against diphtheria which is so universally and successfully performed to-day. Diphtheria and tetanus toxins are similar in that detoxified toxins, or toxoids, can be prepared and precipitated with alum to retain their antigenic properties and yet be non-toxic.

Dr. J. A. Bigler and M. Werner, of the Children's Memorial Hospital, Chicago, last month reported that the use of combined tetanus and diphtheria immunization is not only possible, but is apparently as practical as immunization against diphtheria alone. Their work, supported in part by a grant from the Elizabeth McCormick Child Research Fund of the Institute of Medicine of Chicago, was conducted on 240 children from eight months to six years of age and the effectiveness of the immunization was determined by the antitoxin content of the blood serum.

The authors suggest that to produce an adequate basic immunity, two subcutaneous injections of 1 cc. of the combined toxoid or three subcutaneous injections of 0.5 cc. be given with an interval of three months or more between injections. The reactions following injections are no different from those following injection with alum precipitated diphtheria toxoid alone. There is a stinging or burning for a few minutes at the site of injection, occasionally a reddening of the area for about 24 hours and rarely a mild general reaction with a low fever for 12 hours. Most children are immunized against diphtheria and smallpox near the end of the first year or during the pre-school age, and the authors suggest

that the combined tetanus and diphtheria injections be given at those ages.

There is considerable confusion as to just how much antitoxin is necessary to protect one against tetanus and there is no test similar to the Schick test to serve as a guide even if the required protective level were known, neither has it been established how long immunity developed by immunization against tetanus lasts. In view of this situation, the authors advise the administration of 0.5 cc. of tetanus toxoid to the immunized person whenever an injury occurs which might be infected with tetanus spores. This injection stimulates the rapid production of antitoxin to a high level within 1 week. This production of antitoxin by the use of toxoid is much superior to the prophylactic dose of tetanus antitoxin because it produces a higher antitoxin titre which persists for several months.

It is entirely possible that within the near future children will be given combined tetanus and diphtheria injections as a matter of routine in place of the diphtheria injections given to-day.

The tetanus and diphtheria toxoids for this study were supplied by Eli Lilly & Co.

—*Jour. A. M. A., 116, 21 (May 24, 1941), 2355*

A NEW FORM OF MAGNESIUM CARBONATE

Magnesium carbonate exists not only in the accepted form described in the U. S. P., but in a wide variety of other forms, according to W. N. Doushkess, of the J. T. Baker Chemical Co., Phillipsburg, N. J., who has isolated 30 different compositions of the chemical showing great variance in physical structure.

One variety of magnesium carbonate is obtained in the form of needle crystals which are optically active under polarized light. Investigation has shown this variety to be the normal or neutral carbonate, $MgCO_3$-H_2O, a very stable form. When added to a citric acid solution a clear solution of magnesium citrate is obtained without boiling. Mr. Doushkess and his associates have developed a dry powdered mixture of the U. S. P. formula for citrate of magnesia which needs only to be added to water to prepare a solution. The product has been patented but is not yet available commercially. Studies are under way to develop a sugar-free citrate of magnesia powder for diabetics.

The normal magnesium carbonate has also been combined with acetylsalicylic acid to form a soluble magnesium acetylsalicylate when the product is added to water. This product, which promises to be an effective analgesic and to be suitable for intravenous use, has also been patented but is not yet on the market.

SULFONAMIDES PLUS SERUM NO BETTER THAN DRUGS ALONE

The combined use of serum and sulfonamide drugs in the treatment of pneumonia is no more effective than the use of sulfonamide drugs alone, according to Dr. Plummer, *et al.*, of Bellevue Hospital, based on a study of 607 alternated cases, 306 of whom received only a drug and 301 received a drug and serum. Even in cases of Types I, II, V and VI, in which the value of serum is best established, the use of serum plus drug was no more effective than the use of a drug alone.

Excluding the patients who died within 24 hours of the start of the treatment, of the 300 patients receiving only a sulfonamide drug, 28 died (9.3 per cent); of the 285 receiving a sulfonamide drug and serum, 28 died (9.8 per cent).

The authors conclude that the present value of pneumonia serum is in the treatment of patients who cannot tolerate sulfonamide drugs or who do not respond satisfactorily to sulfonamide therapy with 24 to 48 hours.

No essential differences were found between the therapeutic response obtained with sulfapyridine, sulfathiazole, dextrose sulfapyridine, sodium sulfapyridine, sulfamethylthiazole and sulfadiazine. There was, however, severe nausea and vomiting with sulfapyridine, dextrose sulfapyridine and sodium sulfapyridine; considerably less with sulfathiazole and sulfamethylthiazole; and practically none with sulfadiazine.

—*Jour. A. M. A., 116, 21 (May 24, 1941), 2366*

SODIUM CARBONATE IN TRENCH MOUTH

A ten per cent aqueous solution of sodium carbonate for topical application and a one per cent concentration for cautious home use are of definite value in the treatment of Vincent's infection, or trench mouth, according to Dr. S. L. Rosenthal, of Philadelphia, in the *Journal of the American Dental Association* for June 1941 (28, 6, 972–974).

The dentist removes debris from the infected area with a saline spray under pressure. The 10 per cent solution is applied beneath the free margin of the gingivae with a glass syringe and blunt, curved platinum needle. The tissues are kept moist for ten minutes. The patient is instructed to use a mouth wash of one per cent sodium carbonate.

The sodium carbonate solution has no deleterious action on the hard or soft oral tissues nor on metallic, vulcanite or resinous prostheses, according to Dr. Rosenthal. The solution does not stain, and its speed of action, power of penetration, effectiveness in the presence of debris, efficiency at mouth temperature, low cost and clinical results recommend it to dentists, he states.

ETHYL CHLORIDE IN MUSCULAR SPRAINS

Professional sportsmen have long believed that immediate active motion after a sprain or pulled muscle provides a quicker cure than immobilization. The difficulty is that it hurts to use a sprained muscle.

Dr. H. Kraus, of the Fracture Service of Presbyterian Hospital, New York, sprays the patient's skin in the area of the sprain with ethyl chloride and has the patient start careful active motion of the part involved. As the movement is increased, new areas of pain develop, and these are promptly sprayed with the anesthetic. The treatments last from ten to thirty minutes, depending upon the severity of the case, and immediate normal use of the affected part can be allowed in a majority of cases. Some cases require several treatments.

To prevent frostbite, Dr. Kraus advises the application of camphor liniment to the skin after it has been sprayed or the use of a mixture of the following:

Ether		
Alcohol		
Acetone	aa	100 cc.
Camphor Liniment		20 cc.

In addition to sprains and pulled muscles, Dr. Kraus has used the ethyl chloride spray treatment for acute muscular spasm due to lumbago or acute bursitis of the shoulder, and in chronic muscular spasm due to "low back pain," sciatica, chronic osteoarthritis, shoulder spasm, etc.

—*Jour. A.M.A., 116, (23) (June 7, 1941) 2582*

PICTURE OF THE MONTH

Pharmacists who have not visited Washington, D. C., during the past few years perhaps do not realize the impressive location of the American Institute of Pharmacy, headquarters of the American Pharmaceutical Association. In this recent photo, taken from the air, the famed Lincoln Memorial is shown in the foreground while the American Institute of Pharmacy is seen to the right of the center, across Constitution Avenue. The Lincoln Memorial is the building which attracts most visitors to Washington and thus our building is seen by thousands of people every month. From above its doorway the Institute proclaims to all the world: "This Building Is Dedicated to Those Who Have Contributed Their Knowledge and Endeavor to the Preservation of Public Health and to the Further Advancement of Science in Pharmacy."

QUININE AS A PROPHYLACTIC AGAINST FLU

A new powder plant was being constructed near Radford, Va., as a part of the National Defense Program, last winter, when an epidemic of influenza broke out nearby. Since the emergency called for as little lost time as possible on the part of workers, a means of prophylaxis was sought.

Dr. A. E. Schnurman, of Radford, to whom the problem was brought, decided to issue 14 pills of quinine sulfate, 5 grains, to each of 6500 employees with instructions to take one pill each morning before going to work. To each of another 6500 employees he gave 14 tablets of soda bicarbonate, 5 grains, as a control.

Thirty-two of those who received the quinine sulfate contracted influenza while 132 of those who received the soda bicarbonate control contracted the disease.

—*Va. Med. Month., 68, (6) (June 1941) 341–342*

Apothecary Shop in Greenfield Village, near Detroit

Come to Detroit

PHARMACISTS WHO ATTEND THE A. PH. A. CONVENTION WILL SEE HOW DRUGS AND MEDICINES WERE DISPENSED 60, 90 AND 150 YEARS AGO IN THE THREE SHOPS WHICH FORD HAS PRESERVED IN THE GREENFIELD VILLAGE AND MUSEUM

IT IS a far cry from the old "Apothecary Shop," as preserved in Greenfield Village, to the modern store of to-day, but pharmacists who visit Detroit with the AMERICAN PHARMACEUTICAL ASSOCIATION, August 17th to 23rd, will have an opportunity to view and study this 150-year-old store, along with two others contained in Greenfield Village and Edison Museum.

The "Apothecary Shop" occupies one end of a one-story frame building in the village. The other end is the old post office—this being the original set-up of the building. The simple and homemade furniture in this Shop dates back to 1803, and, with the building, was moved from Phoenixville, Connecticut.

The drug equipment is not the original of the Shop, but is a collection of antiques in harmony with the age of the store. Here may be seen wooden balances, wooden mortars and pestles, decorative porcelain ointment jars, small hand mills and other equipment of the past.

On the shelves are bottles containing drugs, liquors, tonics, elixirs and nostrums. Back of the wood-burning stove is a case of drawers filled with herbs, On top of the case is a jar for leeches and tall bottles of colored water that symbolize the apothecary's art.

On the left is a counter with a small display case of perfumes at one end, and a screen, back of which the druggist did his compounding while keeping his eye on customers through the familiar glass peephole.

Old prescription books and files from Detroit stores of the past and dating back to the "Gay 90's" are an interesting study in earlier prescription dispensing.

In the General Store, which dates back to 1854, and which was moved to the village from Waterford, Michigan, will be found a smaller drug unit. Although the drug corner contains a few crude drugs, the chief stock was patent medicines such as a country store would then have carried.

A study of these will prove quite interesting, but they are beyond the memory of most of us. For instance, does anyone remember "Brown's Witch-Watch?" It apparently had many uses in its day, and the front label gives directions for both internal and external use; yet, the back label reads, "Caution—do not allow to come in contact with cotton clothing." What a sturdy race our ancestors must have been, and what stomachs they must have had!

The third drug unit is located in the Edison Museum. This display is within the memory of many. It is a reproduction of a typical model drug store of the "Eighties," and is complete in detail and arrangement.

One one side appear the old familiar shelf bottles while sickroom supplies and other drug sundries balance the other, with a prescription counter in the rear center. The colored show globes in the window on either side of the entrance are typical of a drug store of that date.

Pharmacists and their friends who attend this convention will enjoy this trip to Greenfield Village and Edison Museum. There is nothing else like it in America.

OTHER ENTERTAINMENT

The Entertainment Committee is making good its promise to provide an outstanding program, according to Chairman Walter M. Chase. Plans already formulated include a trip to Greenfield Village and Edison Museum, with luncheon at the exclusive Dearborn Inn; a seven-hour lake ride on one of the large steamers of the Detroit and Cleveland Navigation Co.; a President's Dinner; and an "Evening of Fun" during which there will be presented, among other things, a "Board Examination in Reverse," —with prizes for those who really know their stuff and a chance for everyone to laugh "until it hurts."

And the ladies are not to be neglected. In addition to the above features, their special program will include an elaborate Bridge Luncheon at the Detroit Yacht Club on beautiful Belle Isle. Another feature which promises to be most unusual is a Breakfast Meeting to be held under the auspices of the Women's Auxiliary of the A. PH. A.

PRE-CONVENTION ISSUE

The June issue of the PRACTICAL PHARMACY EDITION of the JOURNAL will contain a detailed program for the convention including titles of papers, reports and discussions to be held in the various sections, committee reports and addresses to be presented at the General Sessions and meetings of the House of Delegates, and programs of the meetings of the American Association of Colleges of Pharmacy, the National Association of Boards of Pharmacy, the Plant Science Seminar, the Conferences of Law Enforcement Officials, the Conference of Pharmaceutical Association Secretaries, the National Conference on Pharmaceutical Research and the American College of Apothecaries.

Better to be sure than sorry
. . . . you can't miss if you attend the
EIGHTY-NINTH
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SULFATED HYDROGENATED CASTOR OIL MAKES A WATER-SOLUBLE OINTMENT BASE

NEW HYDROPHILIC AGENT FACILITATES TRANSFER OF DRUGS FROM OINTMENT TO THE SKIN THROUGH THE PERSPIRATION OR SEROUS DISCHARGE RATHER THAN FORMING A BARRIER AS DOES A PETROLATUM BASE

PETROLATUM is contra-indicated as a base for ointments used in the treatment of many skin conditions because it does not absorb water and therefore not only prevents the evaporation of perspiration but in the presence of perspiration or a serous discharge it acts as a barrier between the skin and the medicament. In such cases the perspiration and serous discharge should act as a *medium* through which the medicament reaches the infection rather than be prevented by a petrolatum *barrier*.

Because sulfated, hydrogenated castor oil[1] is of ointment consistency, whereas other sulfated oils are liquid, George W. Fiero, of the University of Buffalo School of Pharmacy, suggests its use as an ointment base in cases where a hydrophilic preparation is desired. Sulfated, hydrogenated castor oil has a body and color similar to wool fat and is soluble in water. It softens at 30° C. and melts at 41.5° C. It has a p_H of 6, which is approximately the p_H of the skin. It can be incorporated readily with many substances not soluble or suspended easily in other bases, and it may be incorporated with aqueous, alcoholic, glycerin, glycol and liquid petrolatum solutions as well as such other bases as petroleum, fats, spermaceti and wax. It does not become rancid. Excess ointment can be removed from the skin with water. It possesses detergent properties. Patch tests conducted in two clinics indicate that it is non-irritating.

ADHESIVE OINTMENT BASE

Sulfated, hydrogenated castor oil (hereafter referred to as SHCO for convenience) can be incorporated readily with medicaments using manipulation with a spatula and pill tile, trituration in a mortar, or trituration with previously melted SHCO. Trituration with fused SHCO is the simplest method and therefore is used in all cases unless otherwise specified; for dispensing, however, it might be less trouble to use the SHCO cold. When incorporating with medicaments, it is sometimes not necessary to use the solvent employed by the official formula. In all cases a small amount of the base or the diluent is incorporated with the medicament and then the balance of the base added. Rapid trituration or use of a mechanical mixer produces a lighter colored ointment due to incorporation of air. Since SHCO in most cases needs no additional solidifiers, in large-scale manufacture the ointments can be poured while hot and allowed to cool in ointment jars without danger of separation of solidifier or the medicament which is well suspended or dissolved in the base.

SMOOTH OINTMENT BASE

For many ointments, however, a smooth, less adhesive ointment is desired. The stickiness can be removed by the addition of many substances such as petrolatum, liquid petrolatum, fats and fixed oils, glycerin, glycols or water. If the resultant ointment is too soft, it may be made stiffer by the addition of solidifiers such as wax, spermaceti, hydrogenated castor oil, hydroxystearic acid or stearic acid.

In most cases the medicament incorporates readily with the SHCO-petrolatum mixture. Often, however, slightly better dispersion is obtained if the material is triturated with the SHCO and the petrolatum added. The amount of petrolatum may vary with the individual ointment. Twenty-five per cent of petrolatum makes a smooth ointment; even if as little as twenty-five per cent of SHCO is used, the ointment is still hydrophilic and may be removed with water.

AN EMULSIFIED BASE

For many purposes an emulsified ointment base is indicated. SHCO is a good emulsifying base and numerous types of emulsified creams

[1] Available from National Oil Products Co., Harrison, N.J.

can be prepared. The simplest type may be made by melting 28.5 parts each of SHCO and petrolatum and adding 43 parts of water, heated to the same temperature. Agitation results in a very good emulsion which is compatible with most medicaments. Other creams may be prepared using substances such as diethylene glycol monostearate, glyceryl monostearate, triethanolamine and its soaps, etc.

This emulsified base can usually be incorporated readily with the medicament. In some cases, however, the medicament should be dissolved in the water or, in the case of substances such as coal tar, incorporated first with the SHCO.

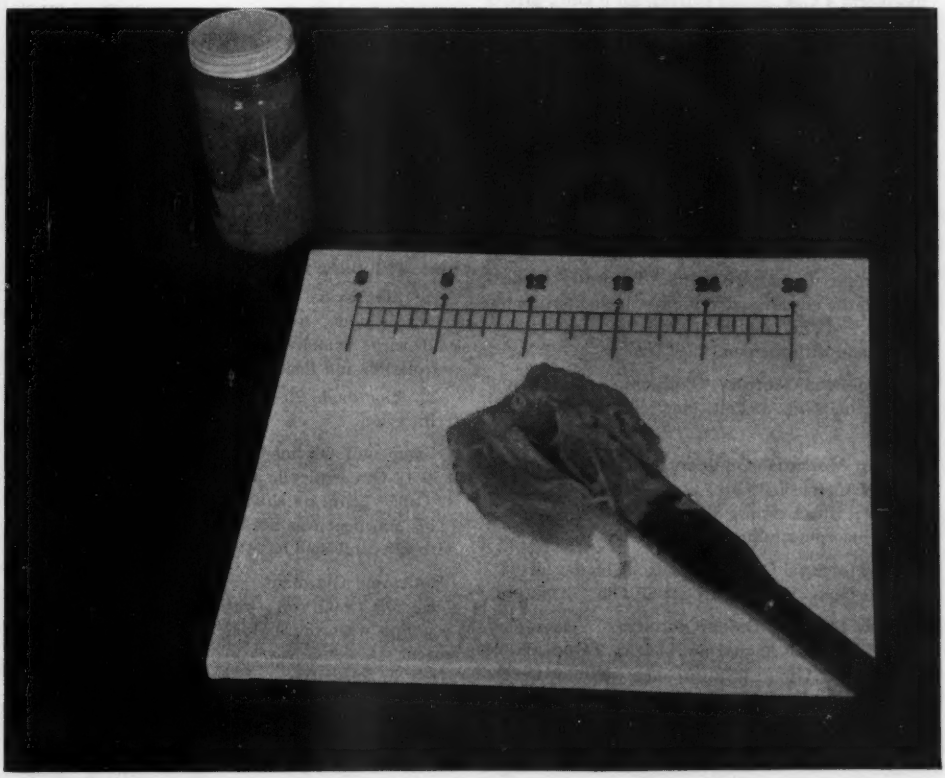
Formulas are given for the three types of ointments, using the official formula modified only in that the SHCO bases replace the official base. In the following list of formulas, the one marked "1" is an adhesive base; "2" is a smooth base; and "3" is an emulsified base. In many cases the ointment can be prepared by merely incorporating the medicament with the appropriate simple ointment and different formulas are not necessary. For large-scale manufacturing, however, a slightly better ointment often results if the material (unless soluble in the amount of water in the cream base) is first incorporated with the SHCO and then the petrolatum and, if a cream base, the water incorporated. The SHCO tends to suspend insoluble substances such as zinc oxide, and mercurial salts, better than other bases.

Simple Ointment. 1. Sulfated hydrogenated castor oil.

2. SHCO 75 Gm., white petrolatum 25 Gm. Triturate the bases, with or without previously melting them.

3. SHCO 28.5 Gm., white petrolatum 28.5 Gm., distilled water 45 Gm. Melt the SHCO and petrolatum, heat the water to the same temperature and add to the molten bases with agitation.

Boric Acid Ointment. Boric acid 10 Gm., simple



ointment 90 Gm. Triturate the acid with the simple ointment, with or without fusion.

Tannic Acid Ointment. Tannic acid 20 Gm., glycerin 20 Gm., simple ointment 60 Gm. Triturate the acid with the glycerin, incorporate the molten simple ointment. (This ointment was not satisfactory when made with the emulsified base.)

Belladonna Ointment. 1. Pilular extract of belladonna 10 Gm., SHCO 90 Gm. Triturate the extract with a small amount of the molten SHCO, gradually incorporating the balance.

2. Pilular extract of belladonna 10 Gm., SHCO 67.5 Gm., petrolatum 22.5 Gm. Triturate the extract with a small amount of the molten SHCO, gradually incorporating the balance and the molten petrolatum.

3. Pilular extract of belladonna 10 Gm., SHCO 25.5 Gm., petrolatum 25.5 Gm., distilled water 39 cc. Triturate the belladonna with a small amount of the molten SHCO, following with the balance and the molten petrolatum. Heat the water to approximately the same temperature and add it to the mixture with trituration.

Chrysarobin Ointment. 1. Chrysarobin 6 Gm., chloroform 4 Gm., liquid petrolatum 6 Gm., SHCO 84 Gm. Triturate the chrysarobin with the liquid petrolatum and the chloroform, add the molten SHCO and triturate.

2. Chrysarobin 6 Gm., chloroform 4 Gm., petrolatum 22.5 Gm., SHCO 67.5 Gm. Triturate the chrysarobin with the molten petrolatum and chloroform, add the molten SHCO and triturate.

3. Chrysarobin 6 Gm., simple ointment 94 Gm. Triturate.

Nutgall Ointment. Nutgall 20 Gm., glycerin 20 Gm., simple ointment 60 Gm. Triturate the nutgall with the glycerin, incorporate the molten simple ointment. (This ointment was not satisfactory when made with the emulsified base.)

Ammoniated Mercury Ointment. Ammoniated mercury 10 Gm., simple ointment 90 Gm. Triturate.

Strong Mercurial Ointment. Mercury 50 Gm., oleate of mercury 2 Gm., simple ointment 48 Gm. Triturate the mercury with the oleate until dispersed, incorporate the simple ointment.

Mild Mercurial Ointment. Strong mercurial ointment 60 Gm., simple ointment 40 Gm. Triturate.

Yellow Mercuric Oxide Ointment. Yellow mercuric oxide 1 Gm., liquid petrolatum 1 Gm., simple ointment 98 Gm. Triturate the oxide with the liquid petrolatum until smooth, incorporate with the simple ointment.

Iodine Ointment. 1. Iodine 4 Gm., potassium iodide 4 Gm., glycerin 12 Gm., SHCO 80 Gm. Dissolve the potassium iodide in the glycerin, triturate with the iodine until dissolved, and incorporate with the SHCO. A stiffer ointment may be prepared by dissolving the potassium iodide in 92 Gm. molten SHCO, followed by the iodine, with no glycerin.

2. Iodine 4 Gm., potassium iodide 4 Gm., glycerin 12 Gm., SHCO 60 Gm., petrolatum 20 Gm. Prepare as above; a stiffer ointment can also be prepared as above; the petrolatum should be incorporated last.

3. Iodine 4 Gm., potassium iodide 4 Gm., distilled water 40 cc., SHCO 26 Gm., petrolatum 26 Gm. Dissolve the potassium iodide in the water; dissolve the iodine in this solution. Melt the SHCO and petrolatum and incorporate the aqueous solution.

Phenol Ointment. Phenol 2 Gm., simple ointment 98 Gm. Incorporate.

Pine Tar Ointment. 1–2. Pine tar 50 Gm., yellow wax 20 Gm., simple ointment 30 Gm. Melt the wax and add to the previously warmed simple ointment. Incorporate the pine tar, previously warmed.

3. Pine tar 50 Gm., yellow wax 20 Gm., SHCO 8.5 Gm., petrolatum 8.5 Gm., water 13 cc. Melt the wax and petrolatum. Mix the molten SHCO with warm pine tar. Mix them and incorporate the water.

Sulfur Ointment. Sulfur 15 Gm., simple ointment 85 Gm. Triturate with or without melting the simple ointment.

Zinc Oxide Ointment. 1. Zinc oxide 20 Gm., SHCO 55 Gm., water 25 cc. Triturate the zinc oxide with the molten SHCO, incorporate the water.

2. Zinc oxide 20 Gm., SHCO 41 Gm., petrolatum 14 Gm., water 25 cc. Triturate the zinc oxide with the molten SHCO, incorporate the molten petrolatum and finally the water.

3. Zinc oxide 20 Gm., simple ointment 80 Gm. Triturate.

Compound Ointment of Benzoic Acid. Benzoic acid 12 Gm., salicylic acid 6 Gm., simple ointment 82 Gm. Triturate the acids with the molten base. (This ointment was not satisfactory when prepared with the emulsified base.)

Calamine Ointment. 1. Prepared calamine 15 Gm., SHCO 65 Gm., water 25 cc. Triturate the calamine with the molten SHCO, incorporate the water.

2. Prepared calamine 15 Gm., SHCO 64 Gm., petrolatum 21 Gm. Triturate the calamine with the molten SHCO and incorporate the molten petrolatum.

Modification (similar to N. F. VII). Prepared calamine 15, SHCO 45, petrolatum 15, compound spirit of rose geranium 1 cc., distilled water 25 cc. Triturate the ingredients in the order named, melting the bases.

3. Prepared calamine 15, simple ointment 85. Triturate.

Camphor Ointment. Camphor 22 Gm., alcohol *q. s.*, simple ointment 78 Gm. Powder the camphor with the alcohol, allow the latter to evaporate and incorporate with the base. (In the case of "2" and "3," the camphor may be dissolved without alcohol treatment, in the warm, molten petrolatum.)

Capsicum Ointment. Oleoresin of capsicum 5 Gm., simple ointment 95 Gm. Incorporate.

Mild Mercurous Chloride Ointment. Mild mercurous chloride 30 Gm., simple ointment 70 Gm. Triturate.

Colloidal Mercurous Chloride Ointment. Magma of colloidal mercurous chloride 30 Gm.,[1] simple ointment 70 Gm. Incorporate.

Mercuric Nitrate Ointment, Half-Strength. Mercuric nitrate ointment 50 Gm., simple ointment 50 Gm. Incorporate. (This ointment is commonly employed by the dermatologist in half strength; dilution with SHCO makes a hydrophilic ointment.)

Red Mercuric Oxide Ointment. Red mercuric oxide 10 Gm., simple ointment 90 Gm. Triturate.

Ichthammol Ointment. Ichthammol 10 Gm., simple ointment 90 Gm. Incorporate.

Stainless Iodized Ointment. Iodine 5 Gm., oleic acid 20 Gm., simple ointment 75 Gm. Warm the iodine with the oleic acid until the red color disappears, incorporate with the simple ointment.

Compound Menthol Ointment. Menthol 10 Gm., methyl salicylate 10 Gm., white wax 10 Gm., simple ointment 70 Gm. Melt the wax, incorporate it with the warmed simple ointment. Dissolve the menthol in the methyl salicylate and incorporate with the base.

Coal Tar Ointment. 1. Coal tar 5 Gm., SHCO 95 Gm. Incorporate with the molten SHCO.

2. Coal tar 5 Gm., SHCO 71 Gm., petrolatum 24 Gm. Incorporate the coal tar with the molten SHCO; incorporate the petrolatum.

3. Coal tar 5 Gm., SHCO 27 Gm., petrolatum 27 Gm., distilled water 41 cc. Triturate the coal tar with the molten SHCO, add the molten petroatum, mix and triturate with the water, previously warmed.

Compound Tar Ointment. 1–2. Rectified oil of tar 4 Gm., tincture of benzoin 2 Gm., zinc oxide 3 Gm., simple ointment 91 Gm. Triturate the zinc oxide with the molten base, incorporate the oil and the tincture.

3. Rectified oil of tar 4 Gm., tincture of benzoin 2 Gm., oxide of zinc 3 Gm., SHCO 26 Gm., petrolatum 26 Gm., water 39 cc. Triturate the zinc ozide with molten SHCO, incorporate the tincture, oil and molten petrolatum, finally the water, previously warmed.

Ointment of Potassium Iodide. Potassium iodide 10 Gm., sodium thiosulfate 1 Gm., distilled water 9 Gm., simple ointment 80 Gm. Dissolve the salts in water; incorporate with the simple ointment. (A stiffer ointment may be prepared by triturating the salts with SHCO, using no water, and incorporating the petrolatum in the case of "2." This ointment was not satisfactory when prepared with the emulsified base.)

Compound Resorcinol Ointment. Resorcinol, zinc oxide, bismuth subnitrate, rectified oil of birch tar, of each 6 Gm., wax 6 Gm., simple ointment 70 Gm. Triturate the solids with warm simple ointment; incorporate the oil and the melted wax.

Scarlet Red Ointment. Scarlet red 5 Gm., simple ointment 95 Gm. Triturate.

Mustard Ointment. Volatile oil of mustard 2 Gm., simple ointment 98 Gm. Incorporate.

Stramonium Ointment. 1. Pilular extract of stramonium 10 Gm., SHCO 90 Gm. Triturate.

2. Pilular extract of stramonium 10 Gm., SHCO 74 Gm., petrolatum 21 Gm. Triturate the extract with the SHCO, incorporate the petrolatum.

3. Pilular extract of stramonium 10 Gm., SHCO 25.5 Gm., petrolatum 25.5 Gm., distilled water 39 cc. Triturate the extract with molten SHCO, add the molten petrolatum and incorporate the water, previously warmed.

Alkaline Sulfur Ointment. This ointment was not satisfactory when prepared with the emulsified base.

Compound Sulfur Ointment. Precipitated calcium carbonate 10 Gm., sublimed sulfur 15 Gm., juniper tar 15 Gm., simple ointment 60 Gm. Triturate.

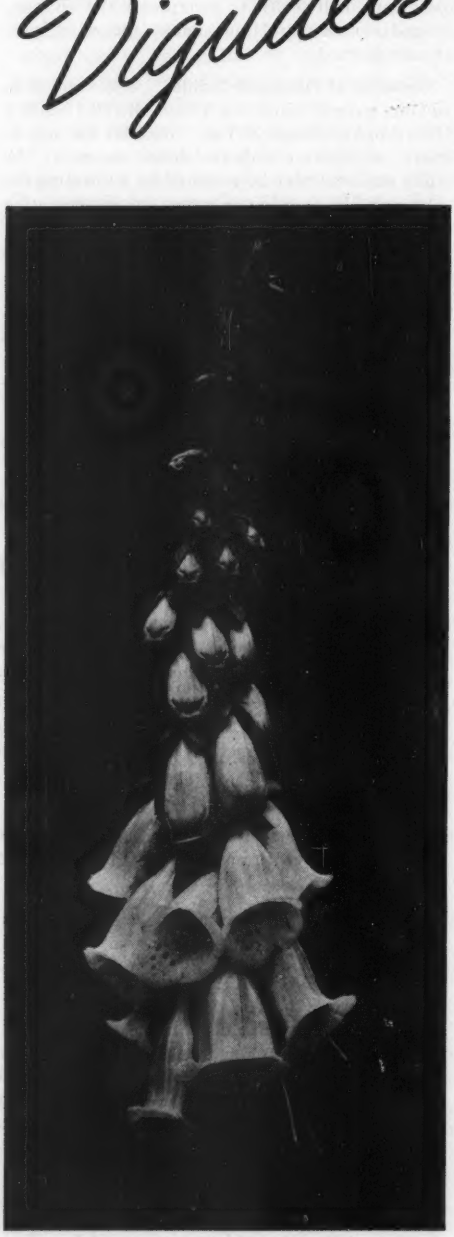
Zinc Stearate Ointment. Zinc Stearate 35 Gm., liquid petrolatum 10 Gm., simple ointment 55 Gm. Mix the liquid petrolatum with the warm simple ointment, and incorporate the zinc stearate by trituration. If a stiffer ointment is desired, the liquid petrolatum may be replaced by simple ointment.

—*Jour. A. Ph. A., Sci. Ed., XXX, 5 (May 1941),* ***145–147***

[1] Courtesy of Research Dept., The Upjohn Co., Kalamazoo, Michigan.

Digitalis Dilemma

CONTROVERSY APPEARING IN CURRENT MEDICAL JOURNALS OVER VARIANCE IN STRENGTH OF TINCTURES WHEN ASSAYED BY FROG AND CAT METHODS, IMPORTANT TO PHARMACISTS



IF ONE of your physician friends walked into your pharmacy to-day and said, "Bill, what's wrong with the tincture of digitalis you are using on my prescriptions? I don't specify any particular brand, and I presume you always use a product that meets U. S. P. standards, but the digitalis you dispense seems to vary in strength considerably from prescription to prescription. Sometimes my patients get a product that seems to be too weak and they don't get enough action; at other times they get a product that seems too strong and they become overdigitalized on the same dosage which I always prescribe. How come?"

If this should happen to you, and it is happening every day to pharmacists, you would appreciate the fact that the present digitalis dilemma is no mere academic question.

Charges that tincture of digitalis is not a reliable preparation for physicians to prescribe are being made in various state medical journals and probably are being read and discussed by physicians in your neighborhood. It is claimed that the present U. S. P. tincture is 50 per cent stronger than the tincture of the last U. S. P.; that various manufacturers' products, although labeled U. S. P. XI, vary greatly in strength, the strongest being three times the strength of the weakest; that the standardization of digitalis on animals gives no criterion of its effect on human beings; and that physicians should prescribe preparations of the purified digitalis glucosides rather than the U. S. P. tincture.

If a physician questions you along this line you should be prepared to clarify the matter for him. To do so, you need to know the background and status of the controversy.

The basic difficulty with tincture of digitalis is that there is no completely satisfactory method of assaying the product to determine the therapeutic response which may be expected when a given dose is administered to a human being who needs digitalis. Without a knowledge of what effect a definite dose of a drug will produce when it is administered, the physician is unable to use it safely or satisfactorily. This knowledge is important concerning any drug used in the medicine; in the case of digitalis, being a heart stimulant, it is vital.

There are two more common methods of assaying digitalis: on frogs, and on cats. The frog method is official in the United States Pharmacopœia and has been for several revisions. Each method has its adherents and critics among pharmacologists, but the most disturbing fact is that the two methods give radically different results in the evaluation of strength of the sample of digitalis and neither may give a dependable index to the action on man.

When tincture of digitalis ages it grows weaker according to the U. S. P. frog test but its potency changes a very little when judged by the cat method. Recently the Food and Drug Administration seized a manufacturer's tincture of digitalis because they found it only about $^1/_2$ as potent as U. S. P. tincture when tested by the frog method. By the cat method, however, this tincture met the potency to be expected of the U. S. P. tincture, and clinical tests showed the tincture had full potency on man.

Six leading brands of tincture of digitalis, presumably being of equal potency when judged by the U. S. P. frog method, varied by the cat method, to the extent that the strongest tincture was nearly three times as potent as the weakest.

In a recent test on a human patient 8.8 U. S. P. units of one preparation of digitalis leaf produced satisfactory digitalization, while the same number of U. S. P. units of another produced symptoms of poisoning. Assayed by the cat method the dose of the satisfactory preparation represented 12 cat units whereas the same dose of the one which produced poisoning represented 20 cat units.

The cat method, however, is not a reliable guide when it comes to measuring preparations of the purified glucosides of digitalis. In tests on human patients three cat units of a product of purified glucosides produced the same therapeutic effect as 20 cat units of digitalis.

U. S. P. X AND U. S. P. XI DIGITALIS

Tincture of digitalis U. S. P. XI was intended to be about 25 per cent stronger than that of U. S. P. X, and was so announced but just how much stronger it actually is and how much smaller a dose of it physicians should prescribe no one seems to know for sure.

In the U. S. P. X. official until 1936, tincture of digitalis was assayed by the frog method, using ouabain as a standard, and adjusted to an equivalent of 600 mg. of digitalis leaf per kilogram of frog (the amount required to kill a frog). Some of the best pharmacologists in the country have been working on the digitalis standardization for a quarter of a century and the frog assay is the result of their efforts.

To bring about uniformity in the strength of certain important drugs as they are used in various countries, the Health Committee of the League of Nations in 1926 adopted an International Standard Digitalis Powder and urged the different countries to make their own national standards conform to this powder. The U. S. P. dropped ouabain, adopted the International Standard Powder in the eleventh revision, and authorized the preparation of a reference standard powder for the use of manufacturers in standardizing their preparations. The International Standard Digitalis Powder was 25 to 30 per cent stronger than the ouabain standard used in the U. S. P. X.

The U. S. P. XI reference powder, prepared for American producers, however, did not tally in strength with the International Standard but was stronger; 0.745 Gm. of the U. S. P. standard powder were said to be the equivalent of 1 Gm. of the International Standard Powder. This difference led to great confusion and many reports were published to the effect that U. S. P. XI tincture of digitalis was 150 to 170 per cent stronger than the U. S. P. X tincture.

Dr. C. W. Edmunds, Chairman of the Committee on Bio-Assays of the U. S. P. XI, admitted in 1939 that tincture of digitalis U. S. P. XI is 25 to 30 per cent stronger than tincture of digitalis U. S. P. X. That his statement was not unanimously accepted, however, is shown in the reports of Rowe, Munch and others that it was 50 per cent stronger, and in an article by Dr. Harry Gold appearing in a state medical journal for April 1941 which states that the present tincture is 50 per cent stronger than the former tincture.

Dr. Gold is Assistant Professor of Pharmacology of Cornell University Medical School, New York City, and he is a member of the U. S. P. Revision Committee. He is perhaps the most prominent critic of present digitalis standards and methods of assay and his writings in scientific publications will undoubtedly do more to bring order out of chaos than any other single factor.

Dr. Gold suggests that physicians who have been prescribing 15 minims of U. S. P. X tincture of digitalis should prescribe 10 minims of the U. S. P. XI tincture. He is also critical of the fact that the U. S. P. allows a 40 per cent range in potency in tincture of digitalis, a spread that can mean much in the therapeutic action of a specific dose.

Standardization of digitalis on man is recommended by Drs. Gold, Cattell, Kwit and Otto, who are developing a method using the electrocardiograph. The ideal, says Dr. Gold, would be the use of preparations of purified digitalis glucosides which do not require bio-assay.

So the position of tincture of digitalis as a dependable preparation is being questioned. Some pharmacologists have even recommended that the preparation be discarded entirely unless a satisfactory method of assay can be developed.

The present discrepancies between the potency of digitalis as determined on the frog, on the cat and on man are too startling to be glossed over with any such statement as Dr. Edmunds made in 1939 that "The Pharmacopœia specifically directs that digitalis must exhibit a certain potency when assayed by the official one-hour frog method, and any contention which is based on other methods of assay therefore does not come into consideration as far as U. S. P. XI digitalis is concerned."

Digitalis, after all, is a drug for use on human beings, not frogs, and the U. S. P. is primarily a book of standards of drugs used on human beings. What physicians want to know is how much digitalis they should prescribe to secure a desired therapeutic response. At present they are not sure.

The articles appearing in current medical journals are bound to alarm physicians. Pharmacists should do their best to help doctors to understand the situation and should place before them every bit of information which will help them in the use of digitalis.

BRANCH MEETINGS

MICHIGAN.—Students of pharmacy were the featured speakers at the April 29th meeting of the Michigan Branch. David Ott, of the College of Pharmacy, University of Michigan, spoke on the subject of cod liver oil. He presented a most interesting paper pointing out the problems that are facing the manufacturers to-day, owing to the war, in obtaining supplies. Also the many substitutes for cod liver oil that have been brought into use by this condition were mentioned by Mr. Ott. Malcolm Toska, of the Detroit Institute of Technology, College of Pharmacy spoke on "Incompatabilities in Capsule Prescriptions." Many interesting facts were brought out by the speaker and methods of overcoming many of the incompatabilities were outlined. Franklin D. VanderBrooks, of the College of Pharmacy, Wayne University, spoke on "Pharmacy and Defense." This paper brought out that standing in pharmacy was not given the proper recognition by the U. S. Government, as compared to other professions in the healing arts. He deplored the present campaign in Michigan to further reduce the standards.

The Branch passed the following resolution:

WHEREAS: The practice of pharmacy is an essential health service; and

WHEREAS: Adequate educational standards for the pharmacist are necessary to protect the Public's health and welfare, and

WHEREAS: An understanding of the medical sciences as they develop requires sound training in the basic sciences upon which modern thereapeutics and the practice of medicine are founded, and

WHEREAS: The National Association of State Boards of Pharmacy has adopted a minimum of four years of college of pharmacy training as preparation for the state licensing examination, and

WHEREAS: Michigan now has a law conforming to this standard, which is in effect in 47 other states, therefore be it

Resolved: That the Michigan Branch of the AMERICAN PHARMACEUTICAL ASSOCIATION goes on record as vigorously protesting against any attempt to lower the present pharmaceutical educational standards in order that certain interested parties may improve their economic status and thereby jeopardize the public's welfare by qualifying inadequately trained individuals to practice pharmacy.

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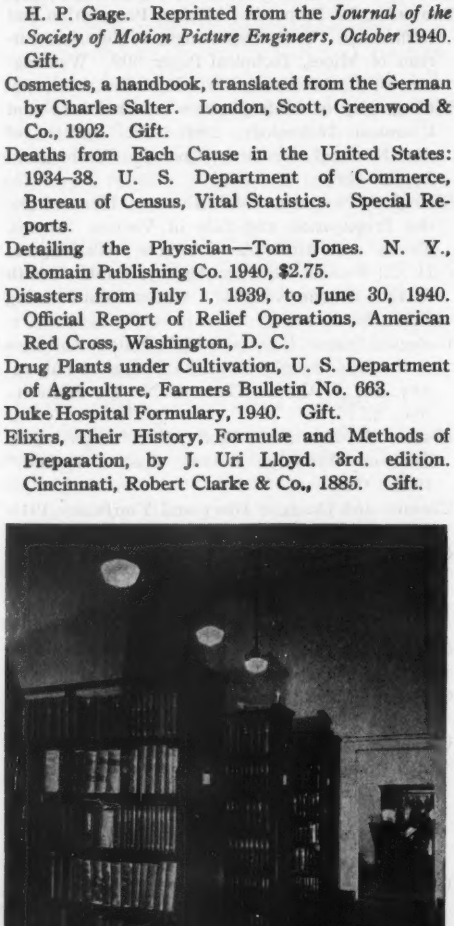

Reference Library of the AMERICAN PHARMACEUTICAL ASSOCIATION

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IN THE NEWS

The Dallas meeting of the American Association for the Advancement of Science will be held during the week of December 29th to January 3rd; two sessions of the Pharmacy Sub-Section of the Medical Sciences Section are planned for Monday, December 29th. Authors who wish to present papers are requested to send in titles as soon as possible to the chairman, Glenn L. Jenkins, University of Minnesota College of Pharmacy, Minneapolis, Minn.

The Board of Trustees of the United States Pharmacopœial Convention held its annual meeting at the Pennsylvania Hotel, New York City, on May 24th to 25th and discussed tentative arrangements for re-convening the 1940 Convention in March 1942 for the purpose of considering the revison of the Constitution and By-Laws of the Convention. The primary object in such revision is to simplify the methods of procedure of the Convention and reduce the number of delegates to provide better representation.

The Board received a special committee from the Council of the AMERICAN PHARMACEUTICAL ASSOCIATION and discussed problems of mutual importance concerning the United States Pharmacopœia and National Formulary. Further discussions and consideration of principles which will govern the revision of these two books of standards in relation to each other will be held early in 1942.

The Board decided to prepare descriptions of patented items which the Sub-Committee on Scope has decided are of sufficient therapeutic importance to include in the U. S. P., and to accept such for recognition in the absence of specific objections on the part of holders of patent rights. In cases of specific objection, such products will not be admitted to the U. S. P.

Plans were laid by the Board for the issuance of monthly press releases covering various phases of pharmacopœial matters.

Dr. John Suchy, Associate Professor of Pharmacy of Montana State University, was elected chairman of the Montana Section of the American Chemical Society at a recent meeting held in Helena.

Dr. Richard A. Deno, Associate Professor of Biological Sciences, Rutgers University College of Pharmacy, Newark, N. J., was elected president of the Friends of Historical Pharmacy, Inc., at the annual meeting of that organization held at the Hugh Mercer Apothecary Shop, Fredericksburg, Va., on May 31st. Dr. Deno succeeds Dean Wortley F. Rudd, of the Medical College of Virginia, who was elected vice-president. All other officers of the organization were reëlected.

During the past year the Friends of Historical Pharmacy, Inc., was created under the guidance of the AMERICAN PHARMACEUTICAL ASSOCIATION to take charge of the Hugh Mercer Shop and other historical projects of the ASSOCIATION. Every member of the AMERICAN PHARMACEUTICAL ASSOCIATION is a member of the Friends.

Miss Mary Lois Brayton, resident pharmacist at the Metropolitan Life Insurance Company Sanatorium, Mount McGregor, N. Y., has donated a fine collection of mortars and pestles to the ASSOCIATION museum.

L. L. Eisentraut, of Des Moines, received the Robert J. Ruth Trophy for the best Pharmacy Week window display of 1940, at the annual banquet of the Polk County Retail Druggists Association, held in that city on May 21st. Mr. Ray Schlotterer, secretary of the Federal Wholesale Druggists Association, which donates the trophy, made the presentation.

William Gray, head pharmacist of Presbyterian Hospital, Chicago, for the past 35 years, retired on March 1st and was succeeded by Malcolm Hutton, who has been the assistant pharmacist at the same hospital for 26 years. The new assistant pharmacist is Franklin B. West, R. Ph. of Belvidere, Ill. Miss Virginia Patka, R. Ph., who has been employed as assistant for several months, will continue on the staff.

Mr. Gray had been a pharmacist in Chicago for more than 50 years, and one of his early positions was in the old Buck & Rayner store at State and Madison Streets. Just prior to becoming pharmacist at Presbyterian Hospital in 1906, he was manager for 15 years of a drug store owned by Captain William G. Morris at Lake Street and Hoyne Avenue, Chicago. Mr. Gray has been a member of the Pharmaceutical Recipe Book Committee of the AMERICAN PHARMACEUTICAL ASSOCIATION for 25 years, and was a delegate to the U. S. Pharmacopœial Conventions of 1920 and 1930. During his long régime at Presbyterian, he has enjoyed the confidence of the members of the medical staff, and last June was a guest of honor at the annual reunion of former internes and residents, attended by many well-known medical men of Chicago and from different parts of the country. His professional affiliations in addition to those mentioned, include life membership in the Illinois Pharmaceutical Association, American Association for the Advancement of Science, Chicago Drug Club, Society for the History of Pharmacy of France and Society for the History of Pharmacy of Germany.

Mr. Hutton is a graduate of the University of Illinois College of Pharmacy, class of 1913. He is a member of the Illinois and the AMERICAN PHARMACEUTICAL ASSOCIATIONS. Mr. West has had courses in the Hynes School of Pharmacy and at the Abel Laboratories. He is a son of Dr. J. F. West, a physician of Belvidere, Ill. Miss Patka is a 1940 graduate of the University of Illinois College of Pharmacy, June 1940, and recently passed her state board examination.

The Presbyterian Hospital pharmacy takes care of the medication needs of more than 12,000 bed patients annually. The department also prepares many of the medical and antiseptic solutions used in the hospital, and puts up around 250,000 capsules and 400,000 powders of various kinds in the course of a year. Anesthesia supplies also are handled by the pharmacy.

WILLIAM GRAY IN THE PHARMACY OF PRESBYTERIAN HOSPITAL

DOSAGE OF ESTROGENS

W. G. Campbell, Commissioner of Food and Drugs, has issued the following notice concerning the labeling of estrogenic drugs:

It has been well established by scientific investigations that the activity of estrone, estradiol and other naturally occurring estrogens intended for oral administration is very much less than when given in the same amounts parenterally. The Food and Drug Administration is of the opinion that this is a material fact which, in order to prevent deception of users of these drugs who are not specialists in endocrine therapy, should be prominently stated on the labels of oral preparations of these hormones in immediate connection with the declaration of unitage or other quantitative statement of active ingredients.

G. D. Searle & Co., of Chicago, has announced that work has been started on a new plant and laboratory to be located in the Skokie district on the outskirts of that city.

Frederick D. Lascoff, of New York City, son of Dr. J. Leon Lascoff, received the honorary degree of Doctor of Pharmacy at the annual commencement of the Connecticut College of Pharmacy.

Dean Wortley F. Rudd, of the Medical College of Virginia, received the honorary degree of Sc.D. at the centennial celebration of the University of Maryland College of Pharmacy, held June 4th and 5th.

Dr. Samuel L. Hilton, retail pharmacist of Washington, D. C., received an Alumni Achievement Award from The George Washington University at its commencement on June 11th.

John G. Searle, president of G. D. Searle & Co., was elected president of the American Drug Manufacturers Association at the recent meeting of that organization, held at White Sulphur Springs, W. Va.

During May the following visited THE AMERICAN INSTITUTE OF PHARMACY: Edwin A. Mandel, Philadelphia, Pa.; Sidney I. Shom, St. Paul, Minn.; Mr. and Mrs. Wm. J. Marvin, Needham, Mass.; Morris C. Leikind, Washington, D. C.; Harold G. Pearson, Marion, Ind.; Irving Harold Levin, Providence, R. I.; Alexander Cohn, Baltimore, Md.; Mr. and Mrs. E. H. Rouse, Orange, Va.; J. B. Merrick, Ardmore, Pa.; E. Clifford Cameron, Jr., Washington, D. C.; V. Cortez Hamlin, Jr., Raleigh, N. C.; Edwin J. Boberg, Eau Claire, Wis.; Lee W. Funk, Jr., Columbus, O.; Mrs. Gertrude D. Ernst, Jamaica Plain, Mass.; Mrs. H. Popp, Boston, Mass.; and Ross C. Gerhard, Boston.

The following group from the Philadelphia College of Pharmacy visited the building on Saturday, May 17th: Prof. C. C. Pines, Earl Thomas, Frank O. Hancock, Jr., Franklin Buckwalter, Sister Maria Aupperls, Louis Carl Cipriny, Eugene L. Cohen, Albert Levitan, David B. Pollack, Bernard Wittin, Simon Levin, Morris Oxmay, Victor M. Ramirez, and Dr. Jose A. Clark, Cienfuegos, Cuba.

OBITUARY

EDGAR BURROUGHS SCOTT

Edgar B. Scott, retired assistant pharmacist of the United States Public Health Service, died at Marine Hospital, Norfolk, Virginia, on April 26, 1941. He was 67 years of age.

Mr. Scott was born in Princess Anne County, Virginia, on January 3, 1874. He became a pharmacist in 1891 and was appointed to the Public Health Service, then known as the Marine Hospital Service, on January 29, 1896. During his service he was stationed at Boston; Wilmington, N. C.; Baltimore; Ellis Island; Savannah, Ga.; and Washington, D. C. He was commissioned as assistant pharmacist in the grade of assistant surgeon on July 23, 1930, and retired on February 1, 1938.

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Treasurer, C. W. Holton, Box 81, Essex Fells, N. J.
Editor of the Journal: Emeritus, E. G. Eberle; *Scientific Edition*, A. G. DuMez, 32 S. Greene St., Baltimore, Md.; *Practical Pharmacy Edition*, E. F. Kelly, 2215 Constitution Ave., Washington, D. C.

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